

FIG. 1: WIRELESS LOCATION USING MULTIPLE CMRS

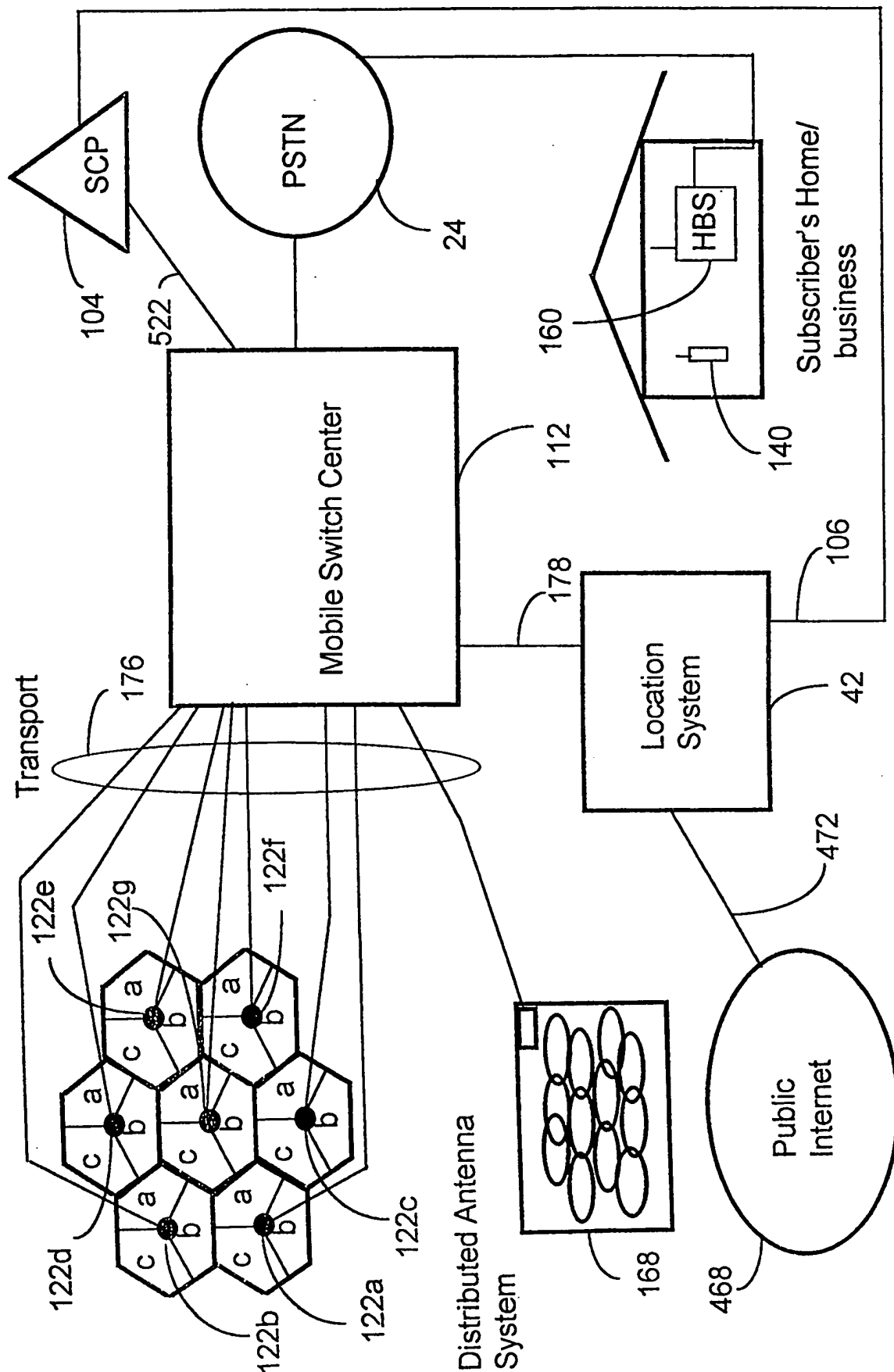


Fig. 2: WIRELESS LOCATION INTELLIGENT NETWORK ARCHITECTURE

FIG. 3

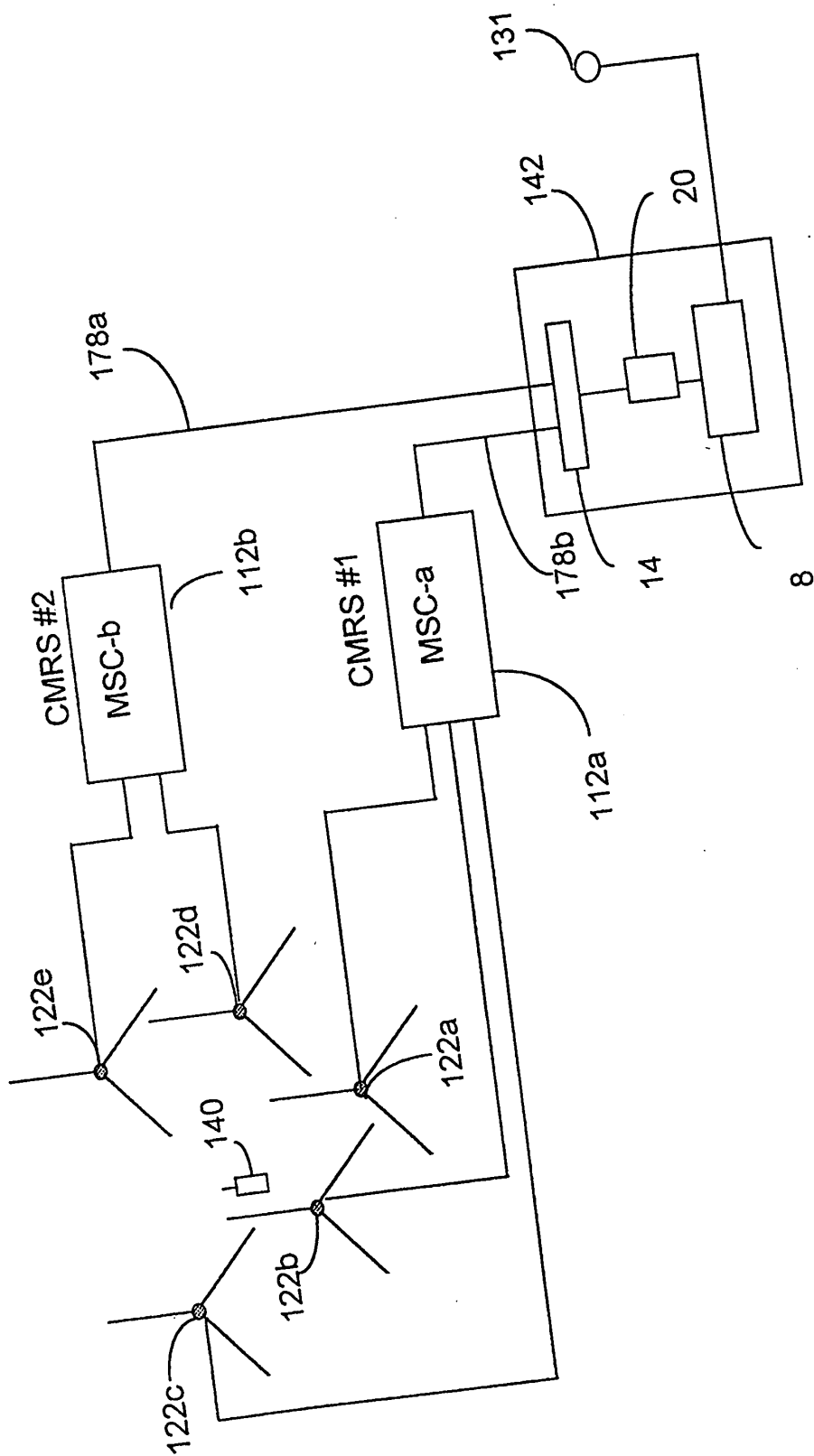


FIG. 3: SHARING CMRS BASE STATION INFRASTRUCTURE

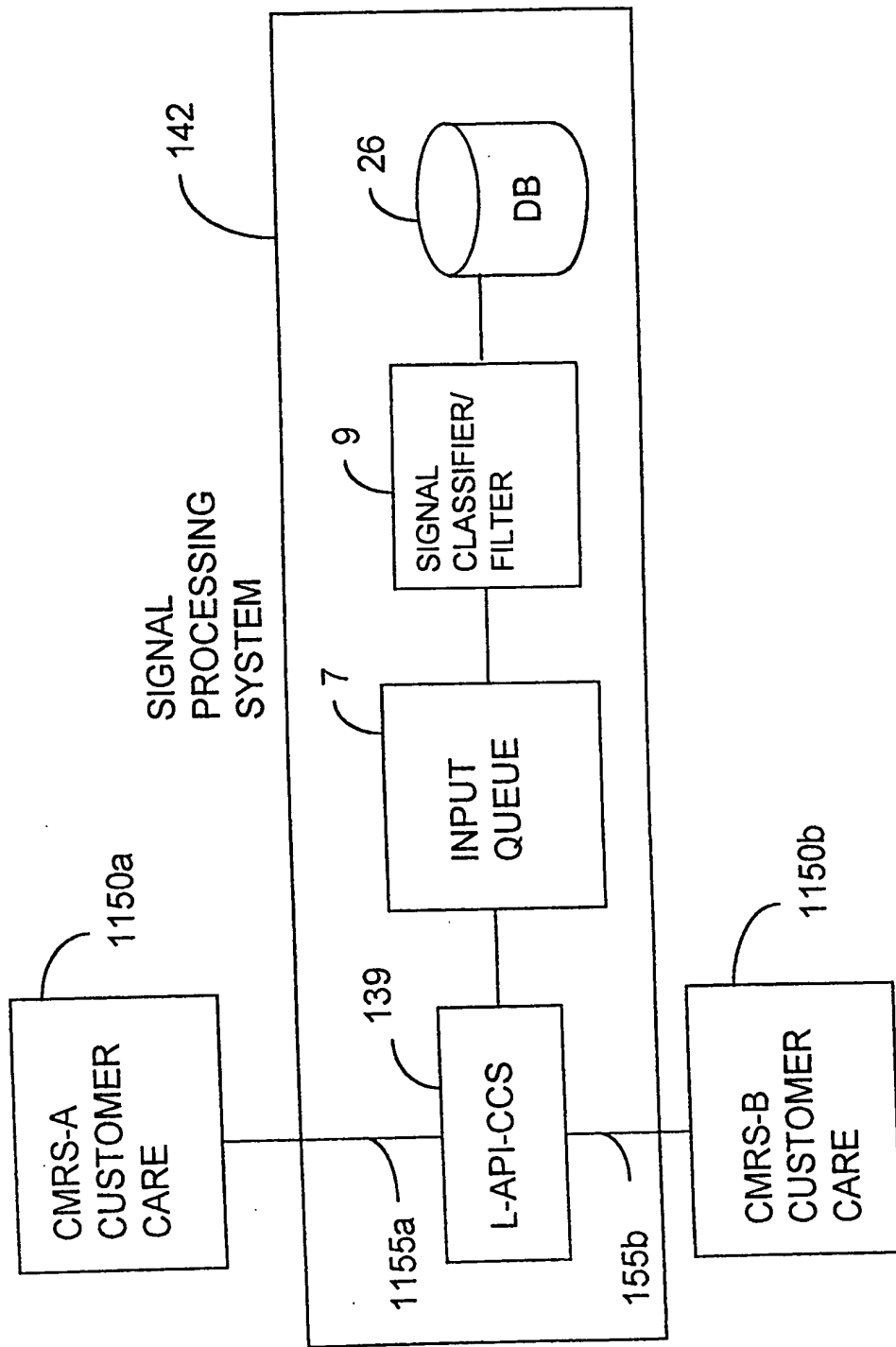


FIG. 4: LOCATION PROVISIONING VIA MULTIPLE CMRS

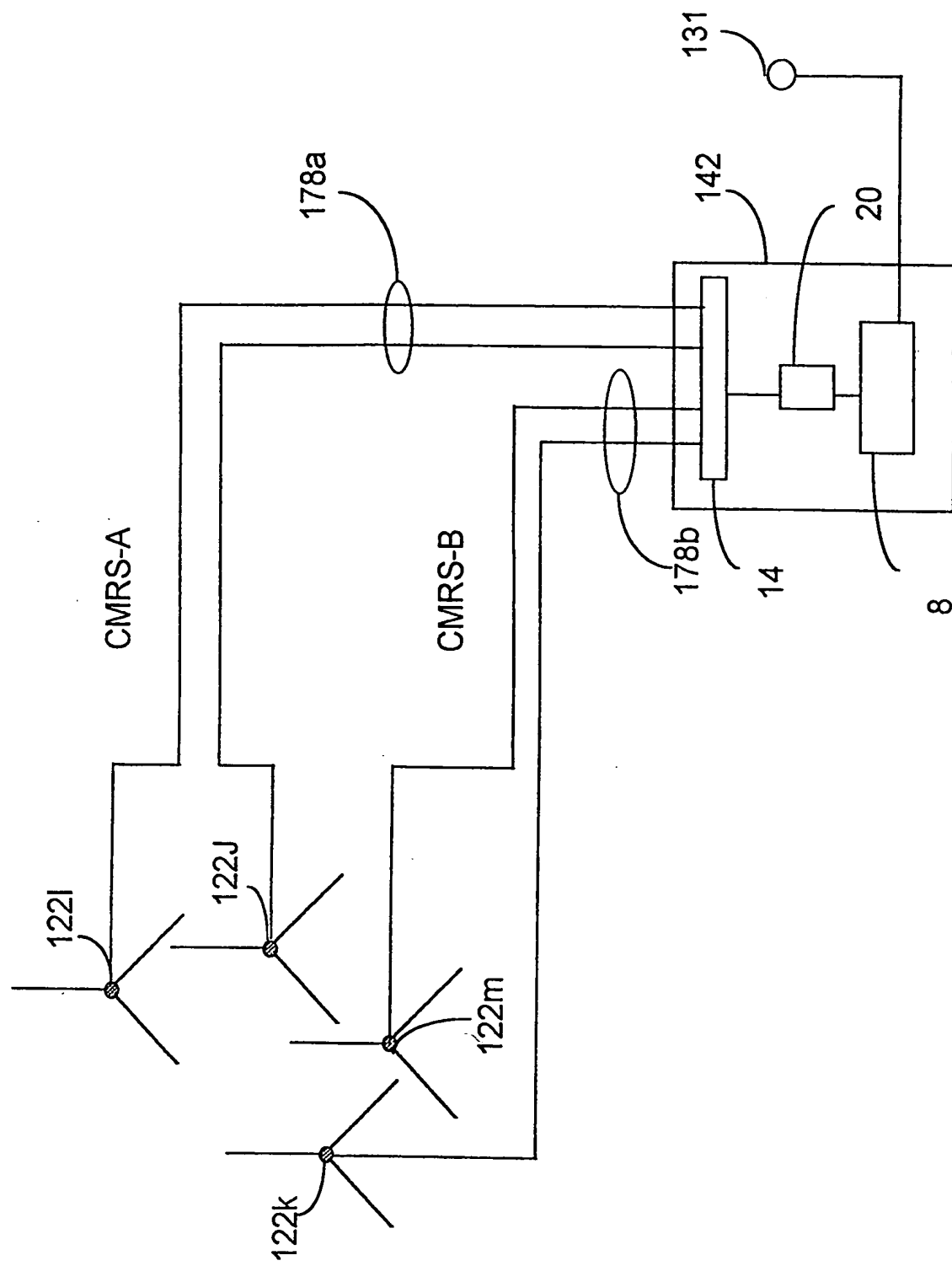


FIG. 5: LOCATION CENTER BASE STATION ACCESS, MULTIPLE CMRS

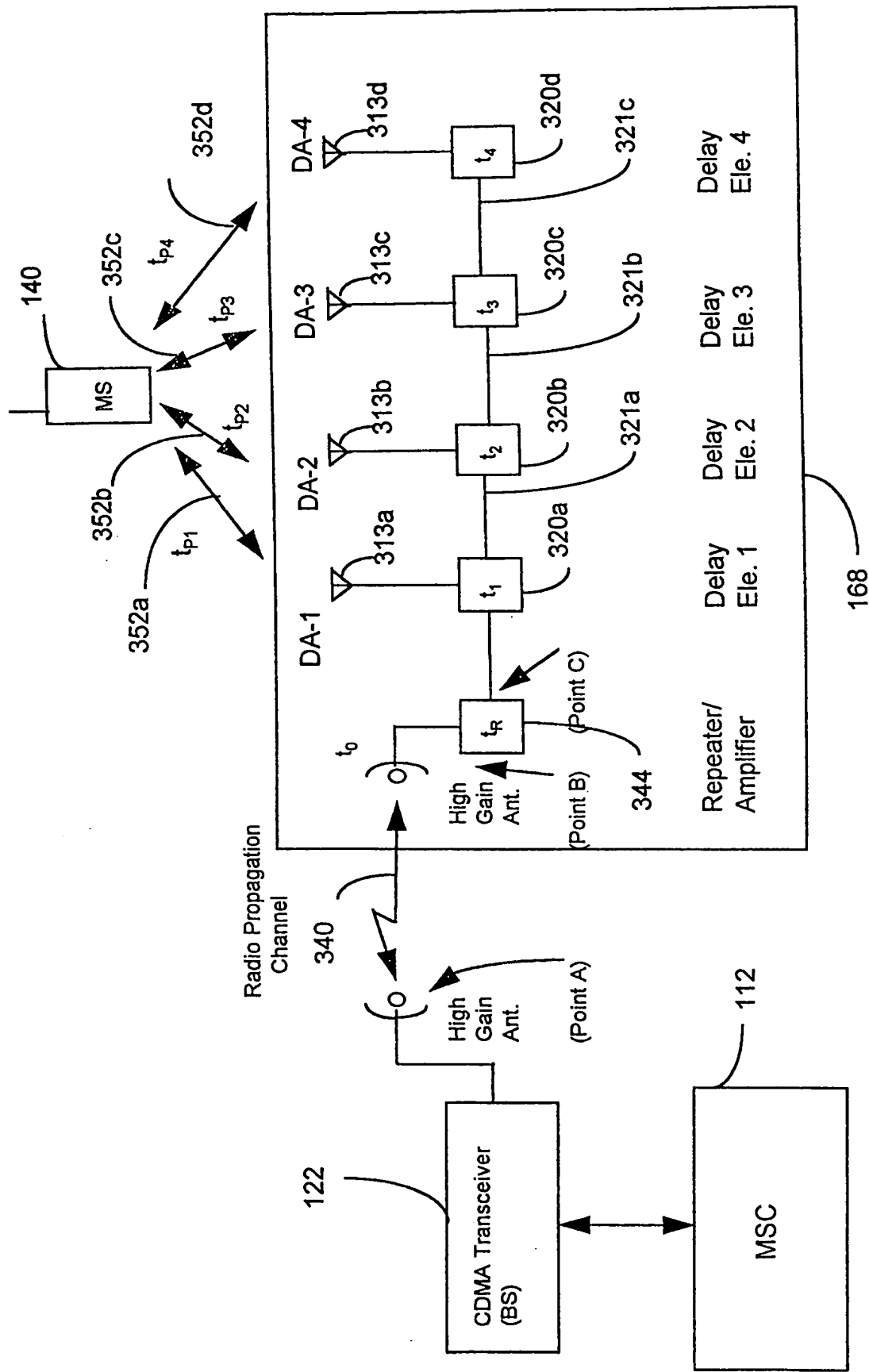


FIG. 6: DISTRIBUTED ANTENNA DELAY CHARACTERIZATION

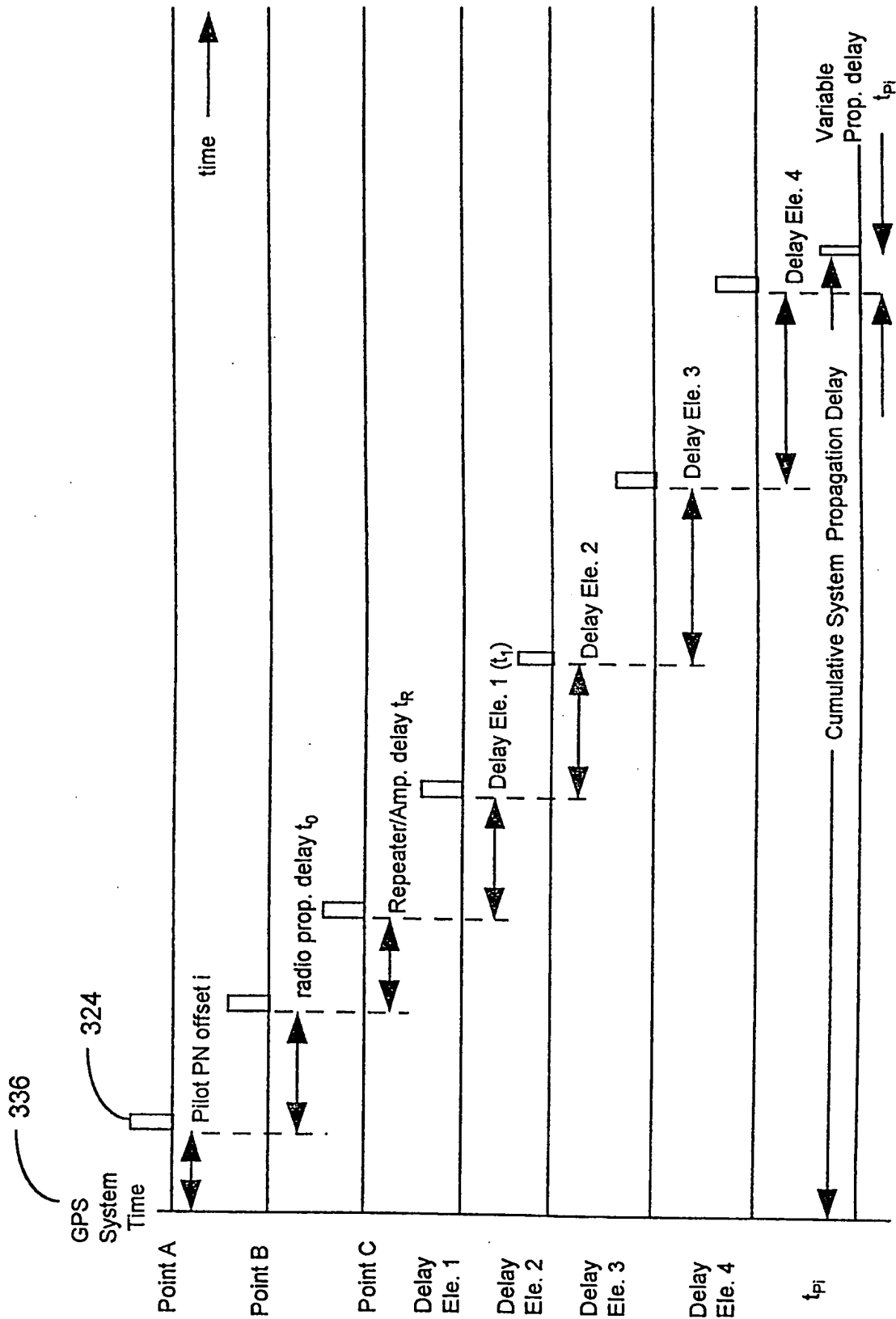


Fig. 7: DA System Timing Diagram

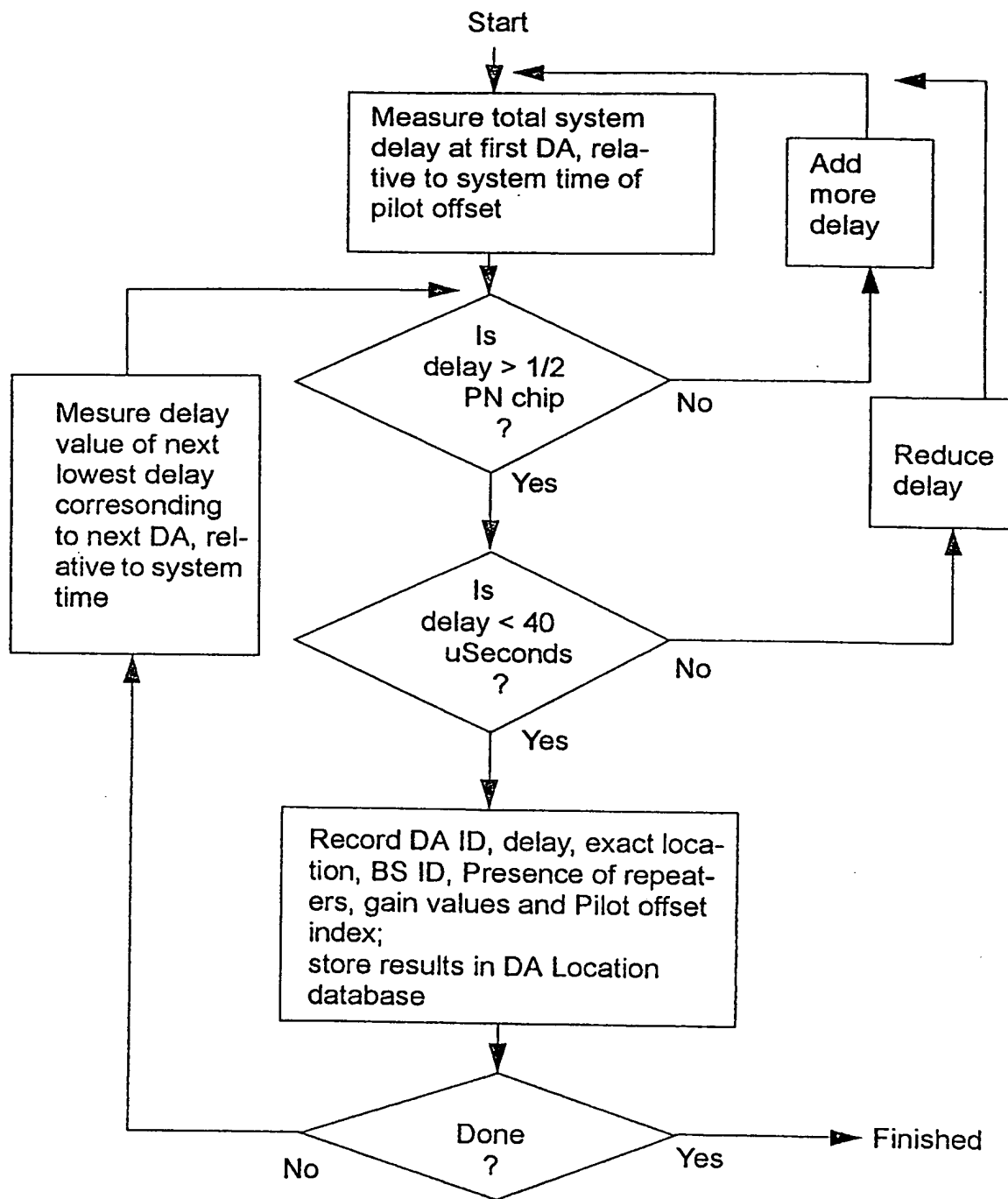


FIG. 8: DA Installation Procedure for Wireless Location

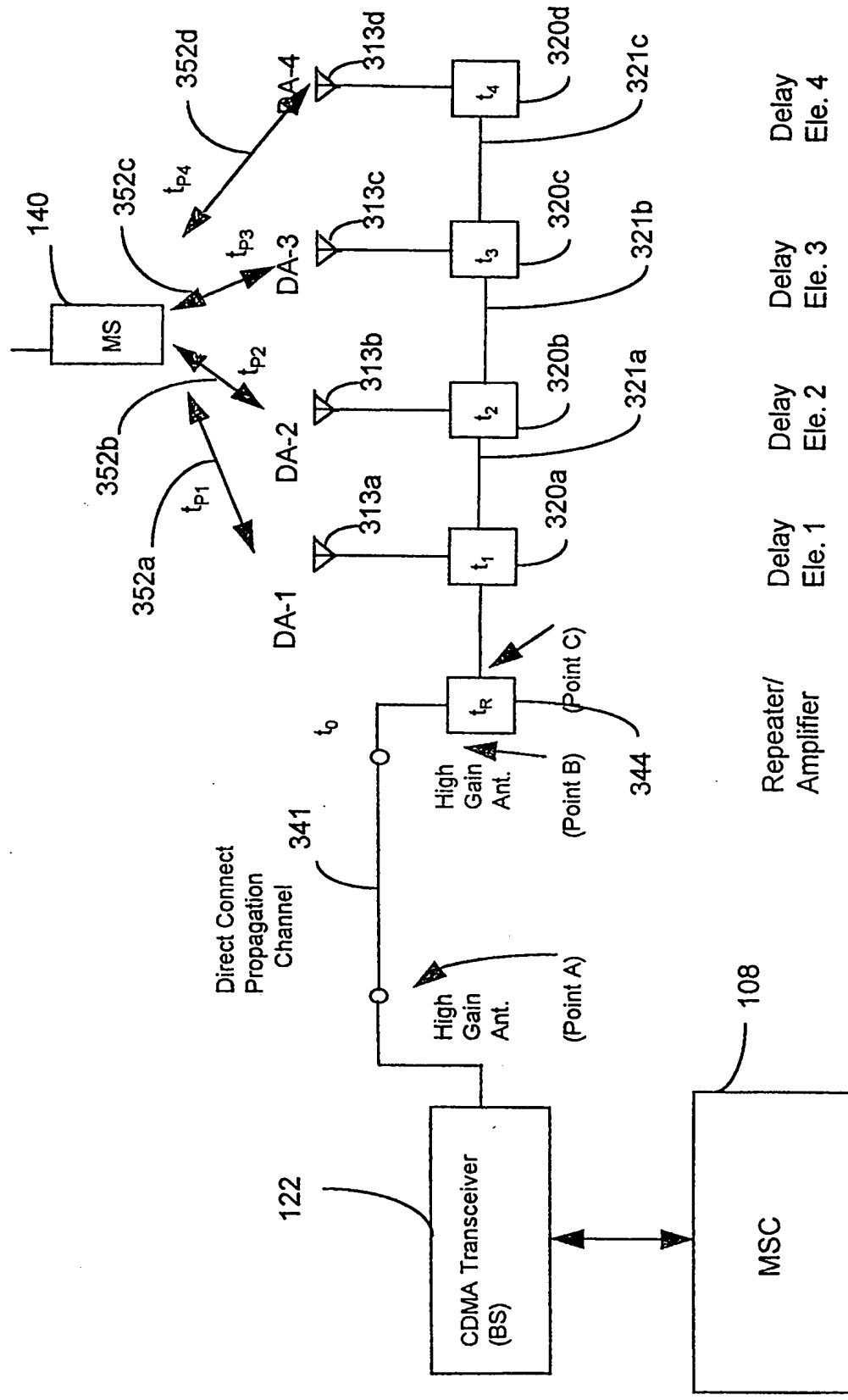


Figure 9: A Direct-Connect Distributed Antenna System

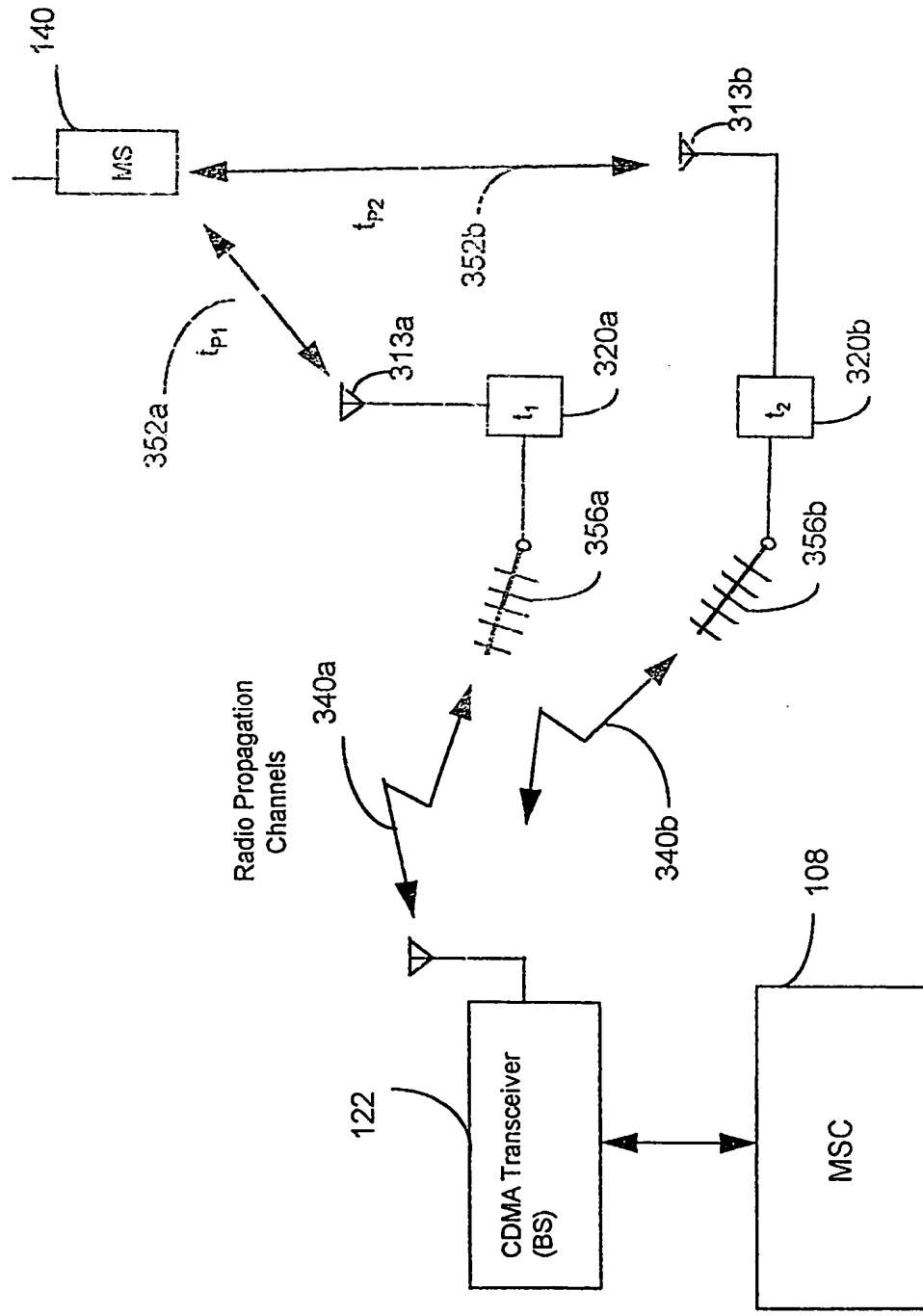


Figure 10: Multipoint Distributed Antenna System

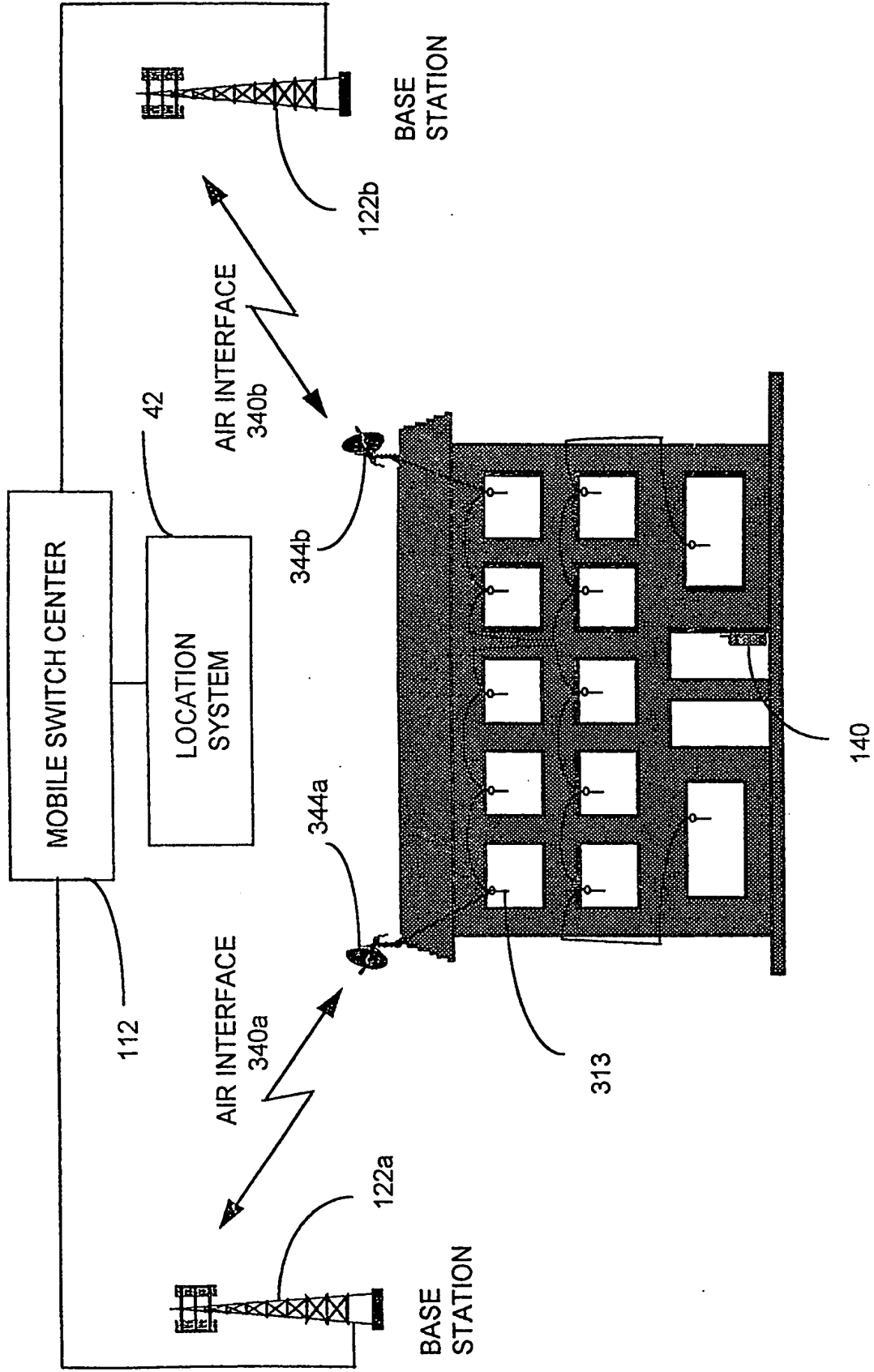


FIG. 11: Dual-Microwave Access Distributed Antenna Example

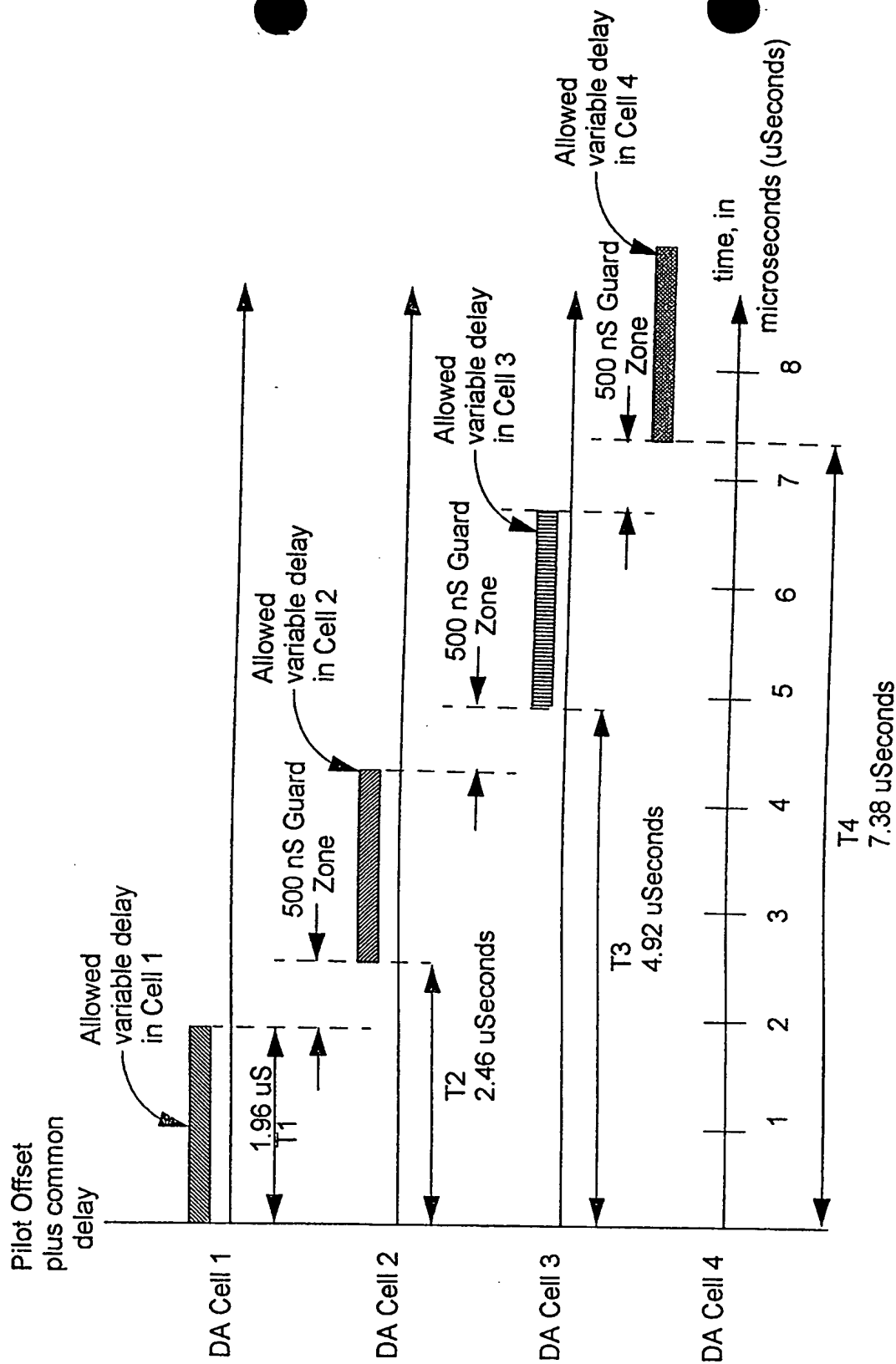


FIG. 12: ALLOWABLE DELAY SPREADS AMONG DA CELLS

All distributed omni antennas have a maximum coverage radius of 2,000 feet

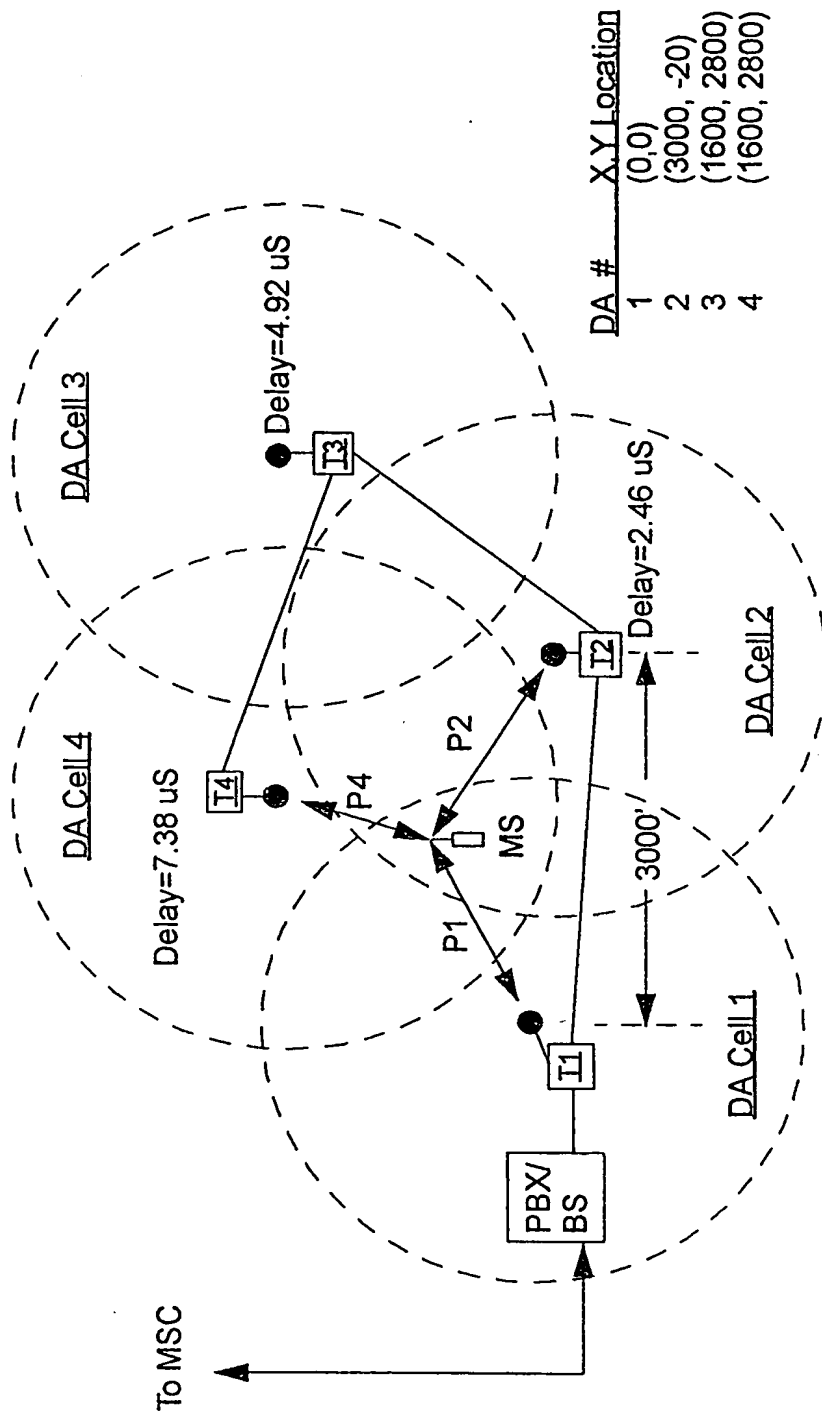


FIG. 13: DA Cell Geometry Illustration

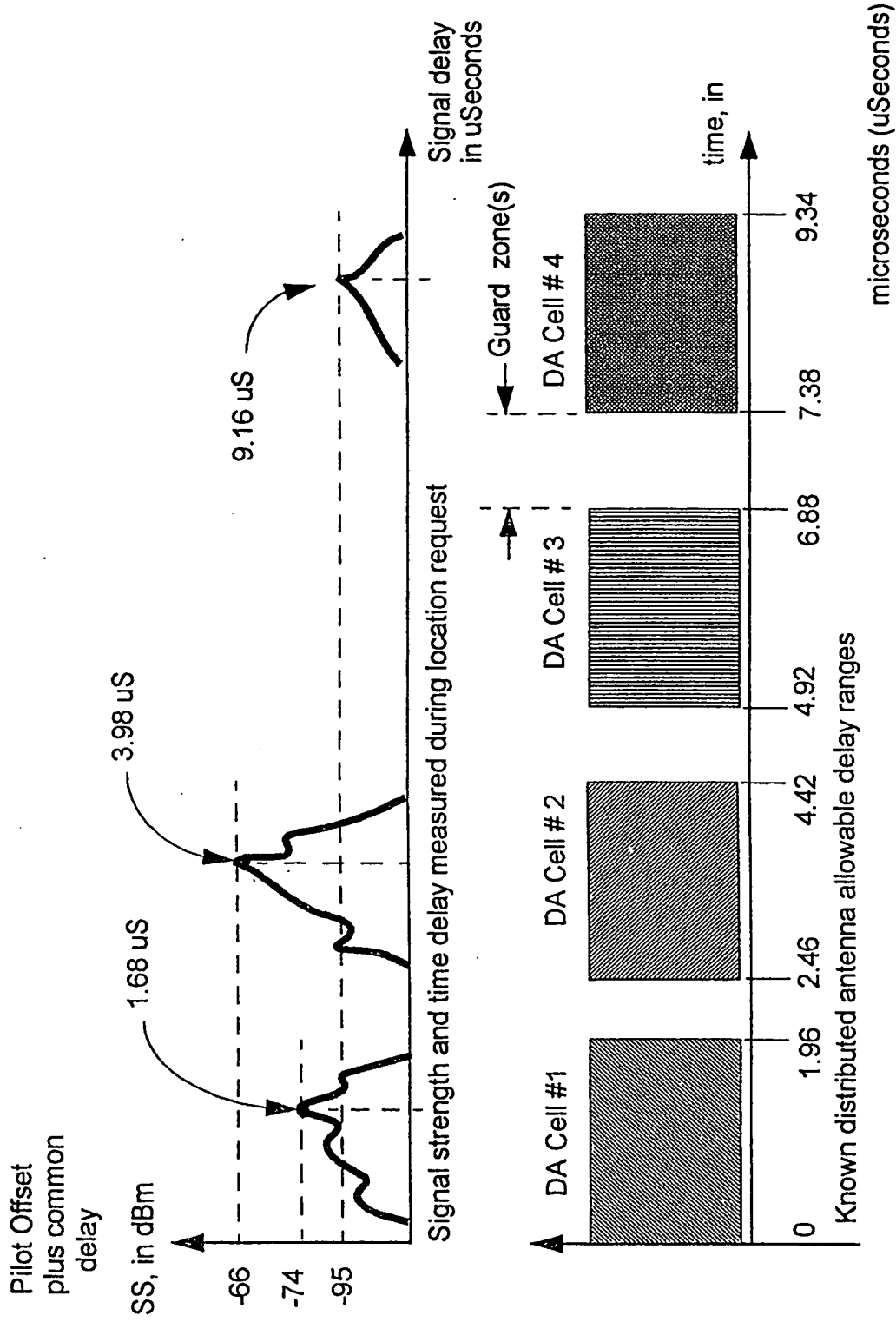


FIG. 14: LOCATION MEASUREMENTS ILLUSTRATION

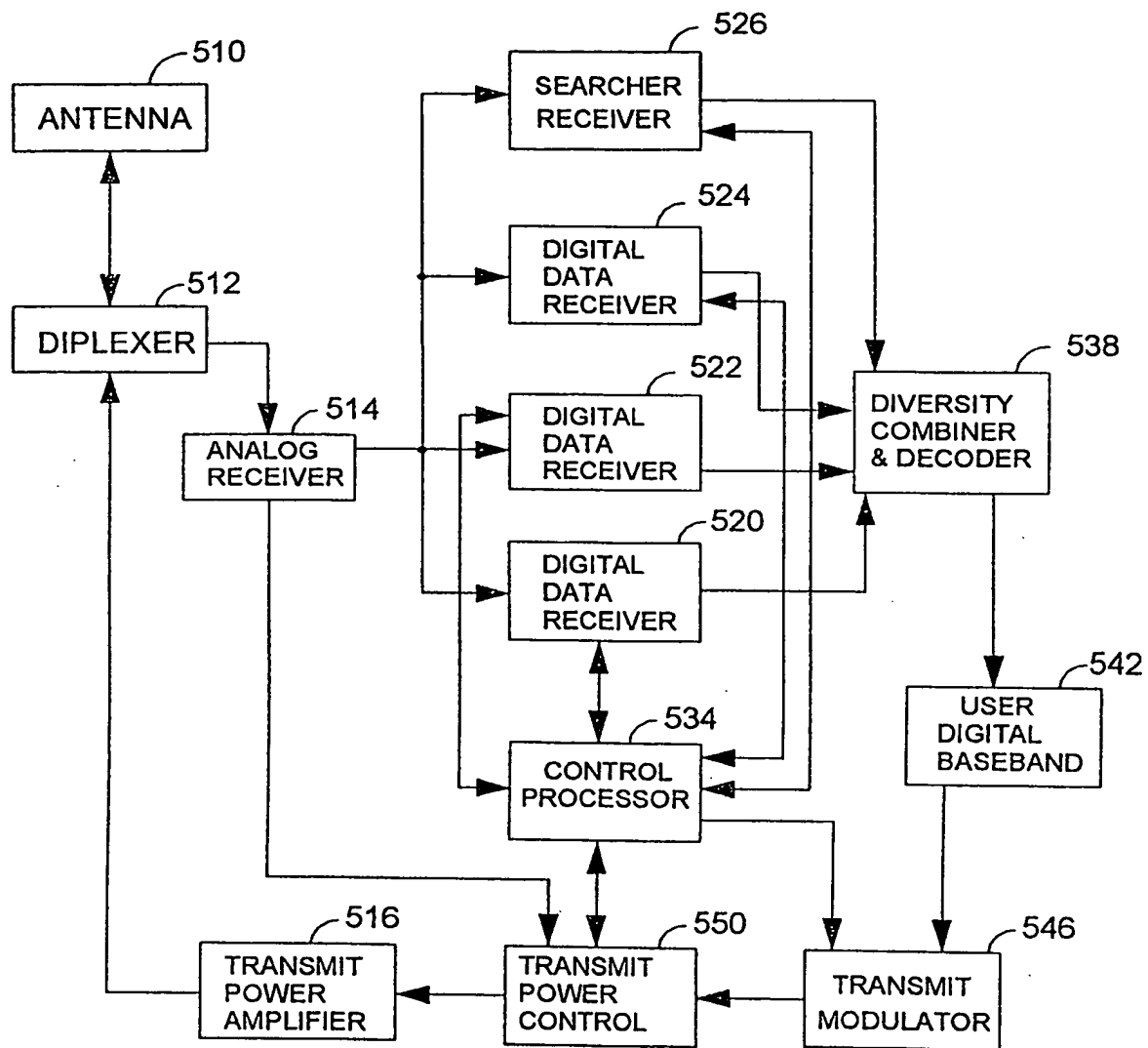


FIG. 15: CDMA Mobile Station Prior Art

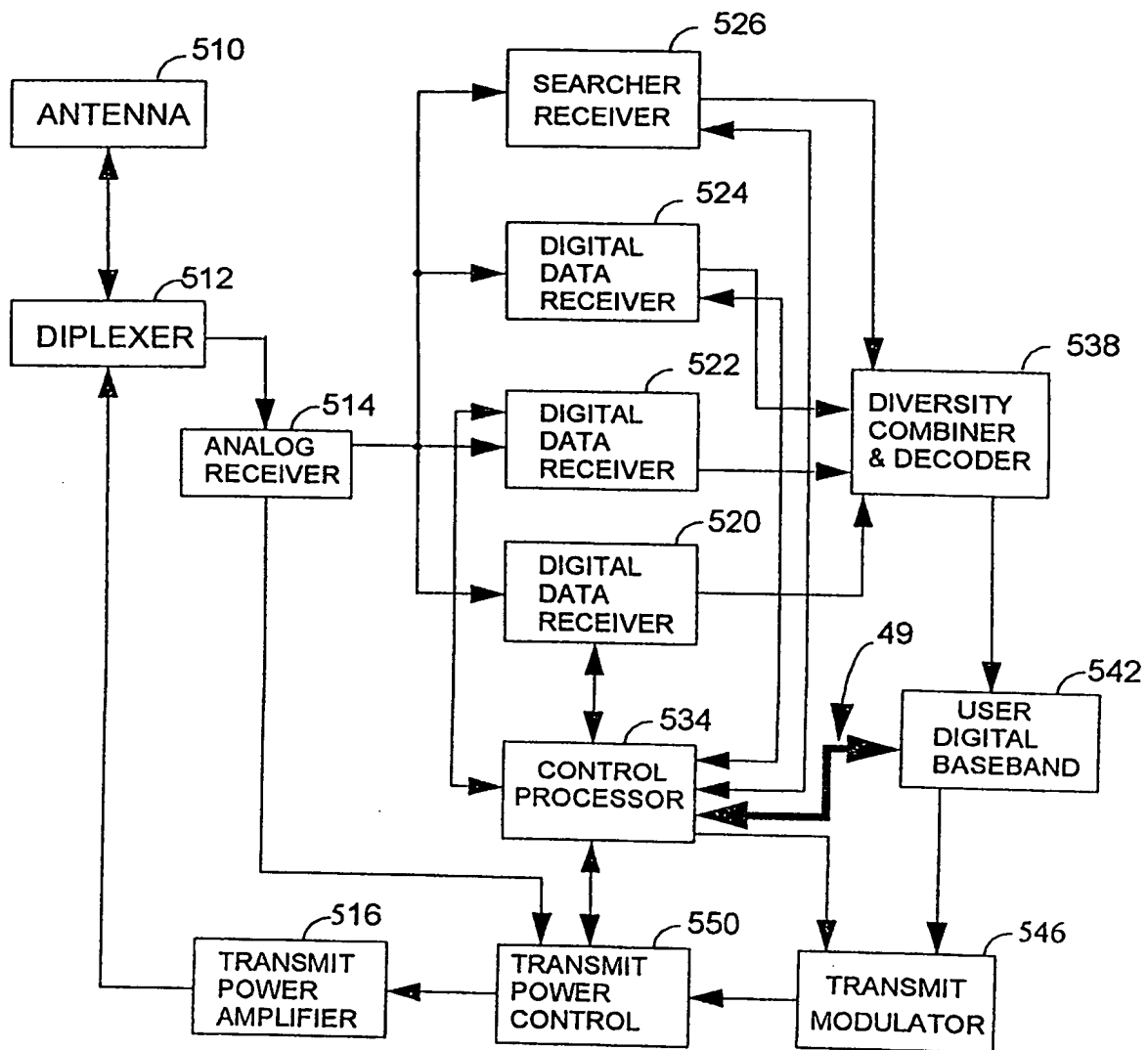


FIG. 16: MS Modification for RF Signal Telemetry

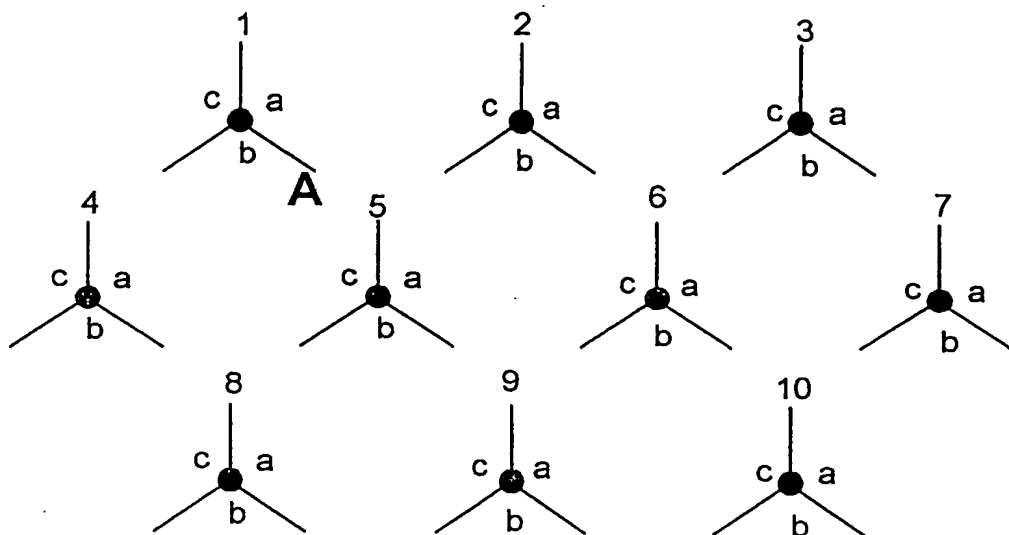


Fig. 18: MS at location A, detects BSs 1b, 5c and 4a

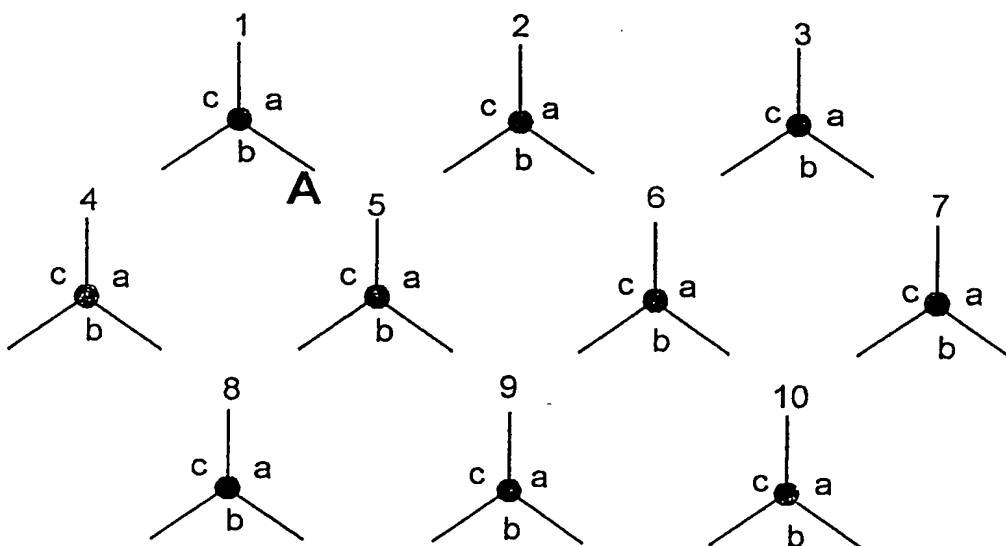


Fig. 19: MS at location A, detects BSs 1b, 5c, 2c and 4a

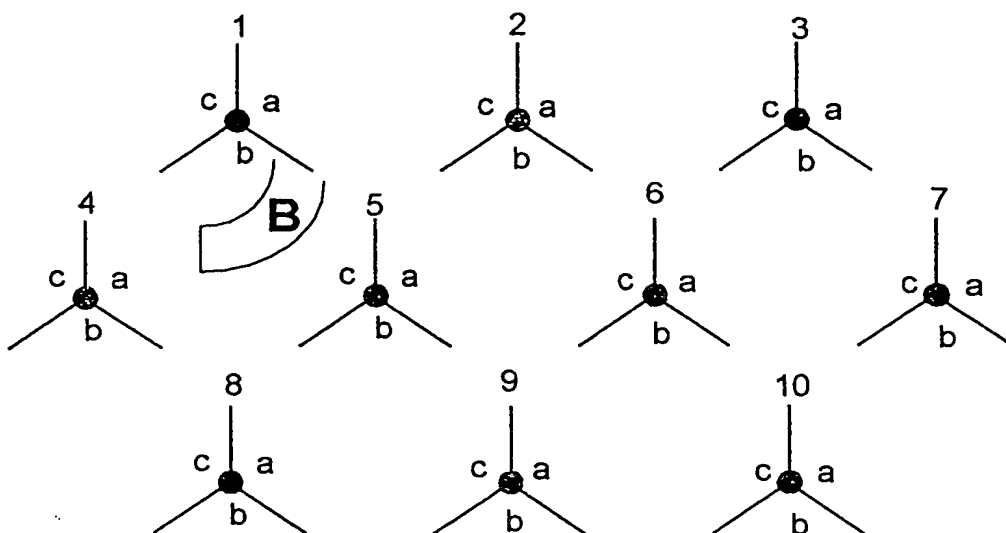


Fig. 20: MS at location B, detects BSs 1b and 2a

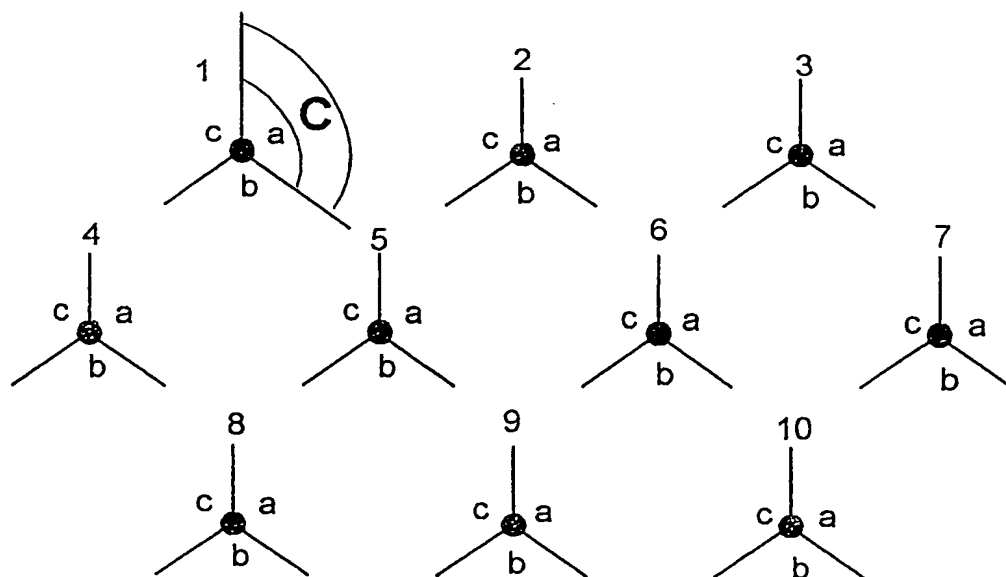
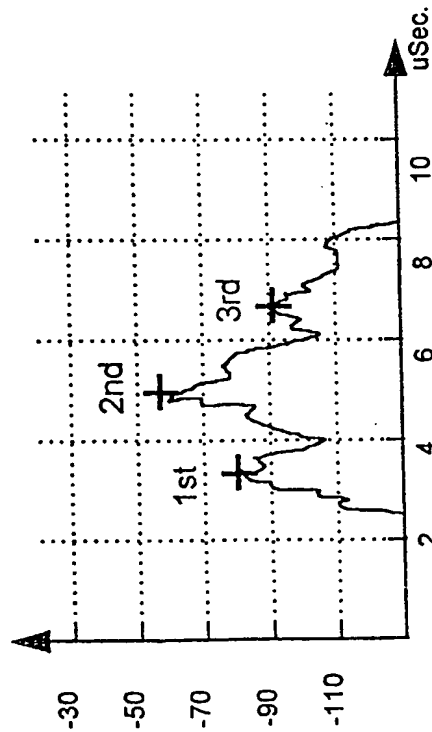
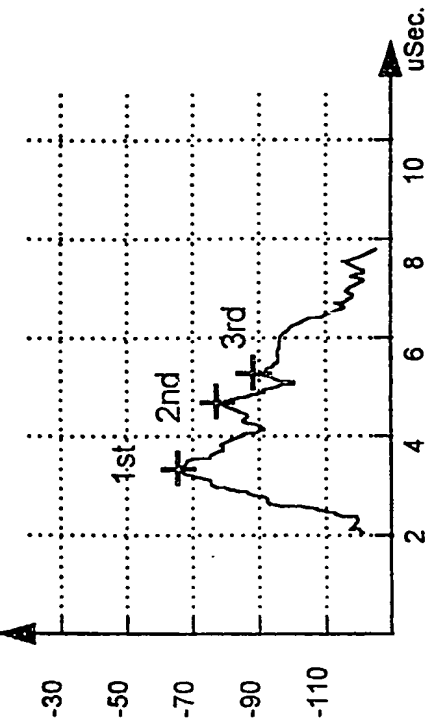


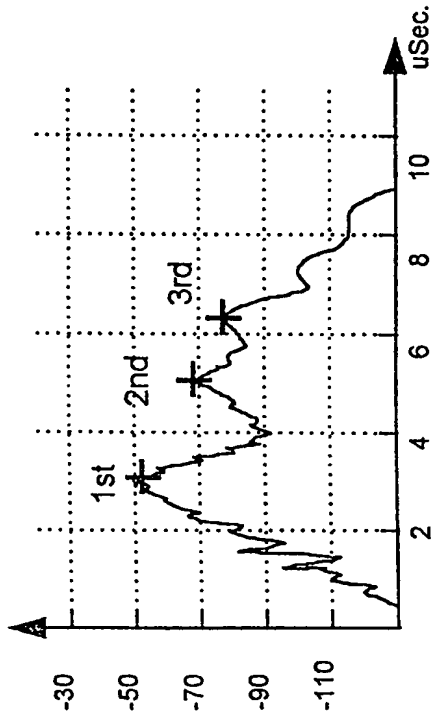
Fig. 21: MS at location C, detects only BS 1a



Delay Spread: MS RX of BS-1
(16th & Stout St.)



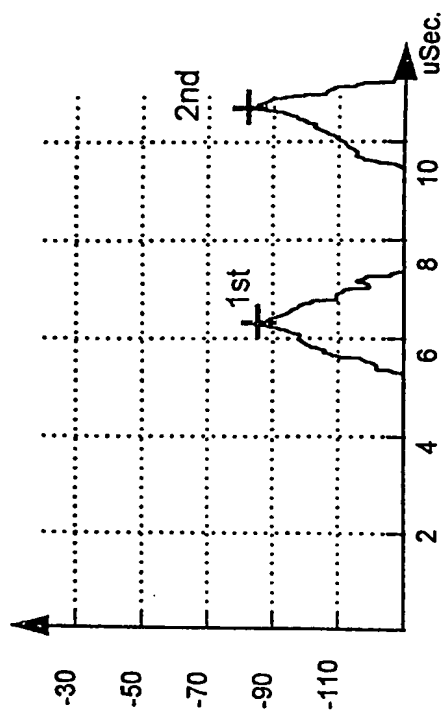
Delay Spread: MS RX of BS-5
(18th & Washington St.)



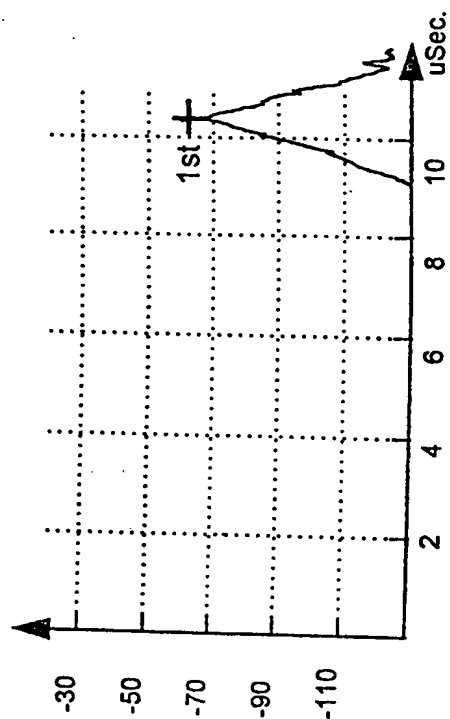
Delay Spread: MS RX of BS-2 (17th & Lincoln)

Figure 22: MS Received Delay Spreads of 3 Base Stations (Dense Urban Canyon)

**Delay Spread: MS RX of BS-151
(South Table Mesa C.O.)**



**Delay Spread: MS RX of BS-152
(GC Mining Tower)**



Delay Spread: MS RX of BS-154 (Hwy 91 & Rocky Flats)

Figure 23: MS Received Delay Spreads of 3 Base Stations (Rural Setting)

Figure 24: Location and CTIA/TR45 Network Reference Model

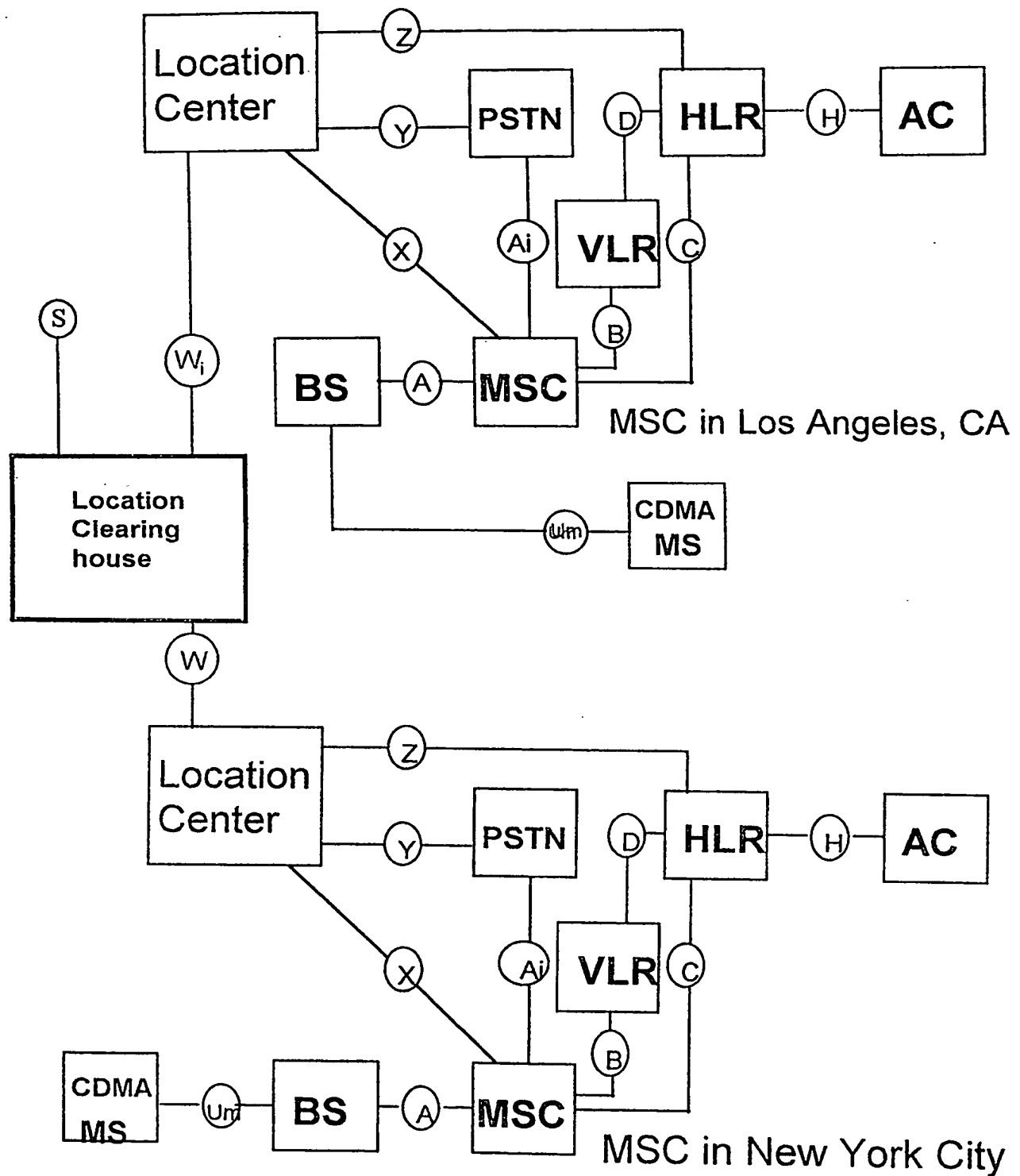


Figure 25: National Location Clearinghouse Structure

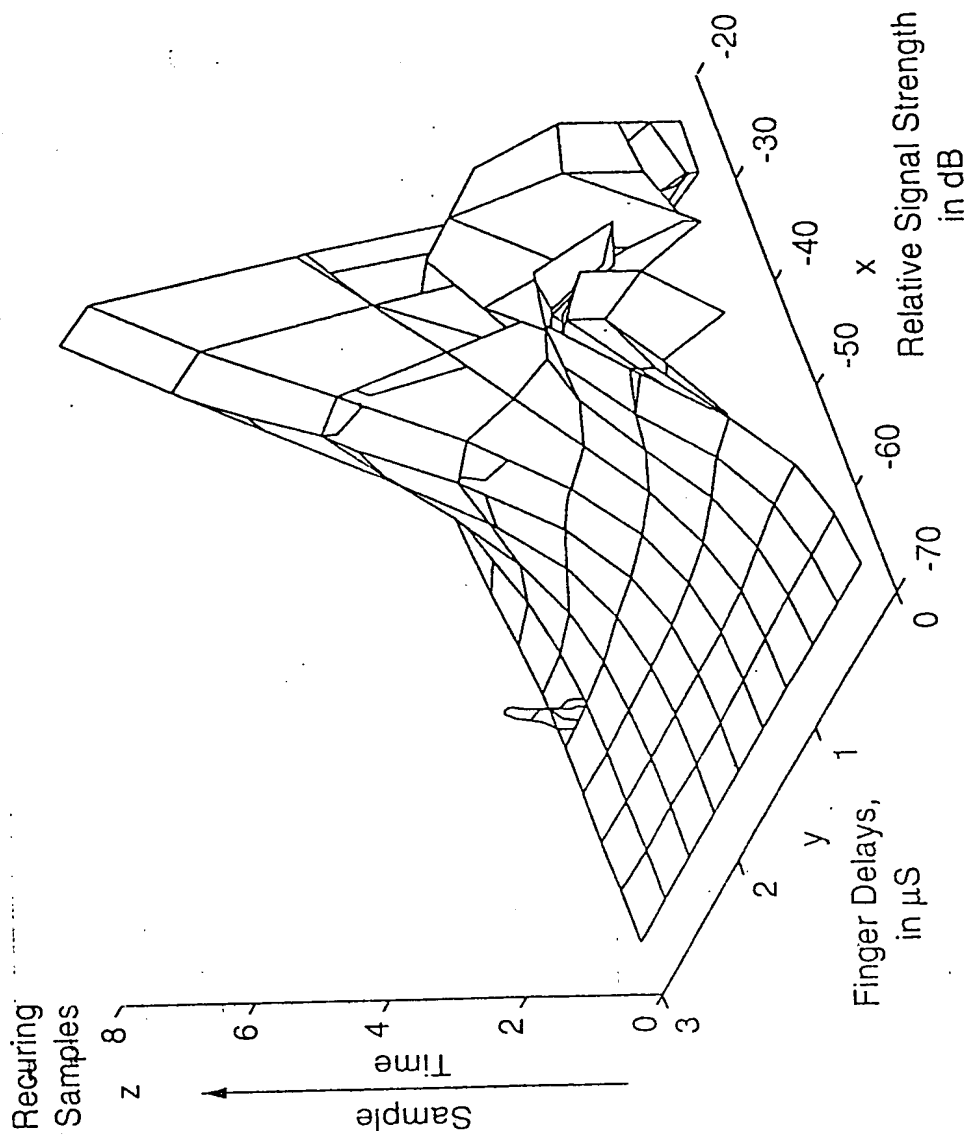


Fig. 26

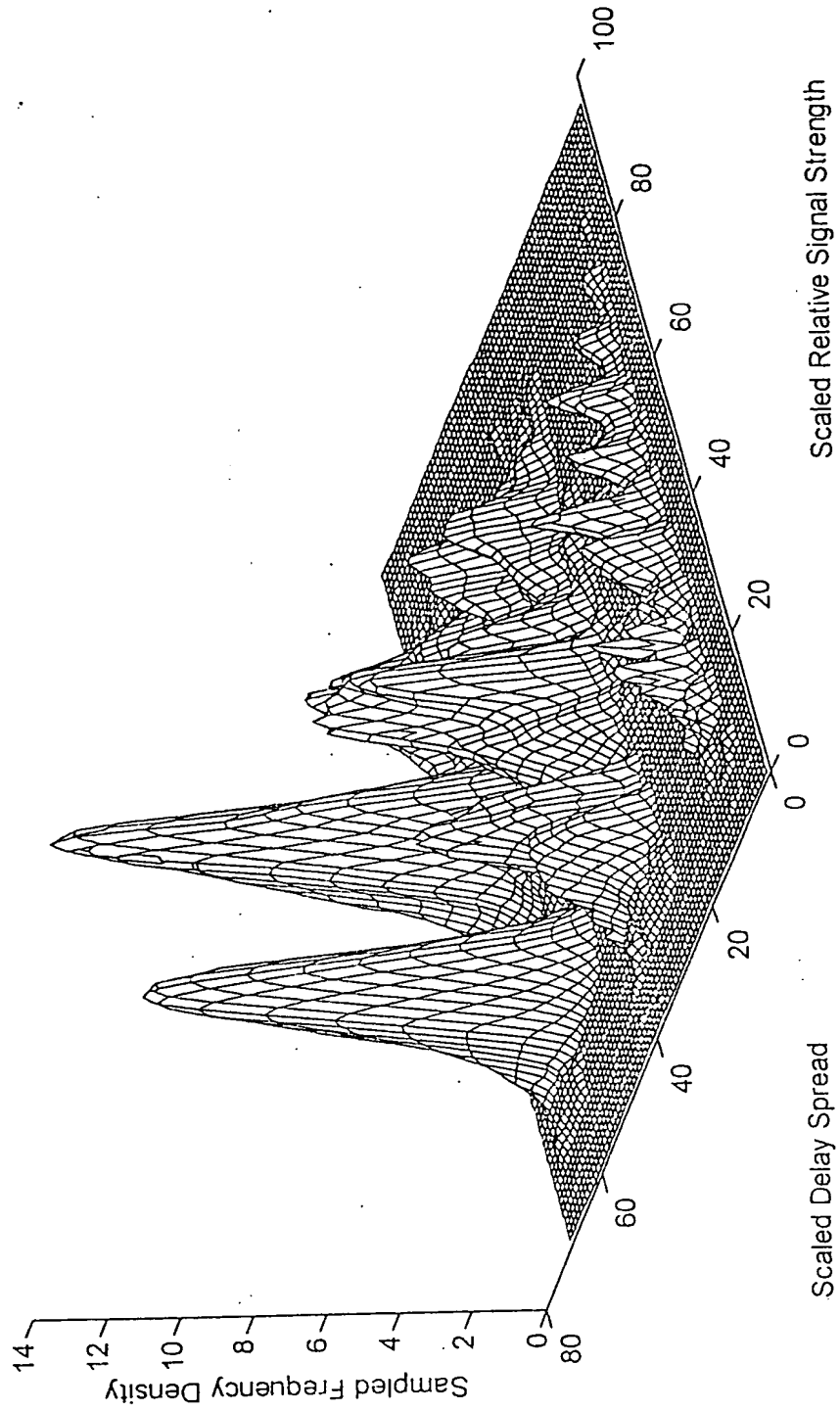


Fig. 27

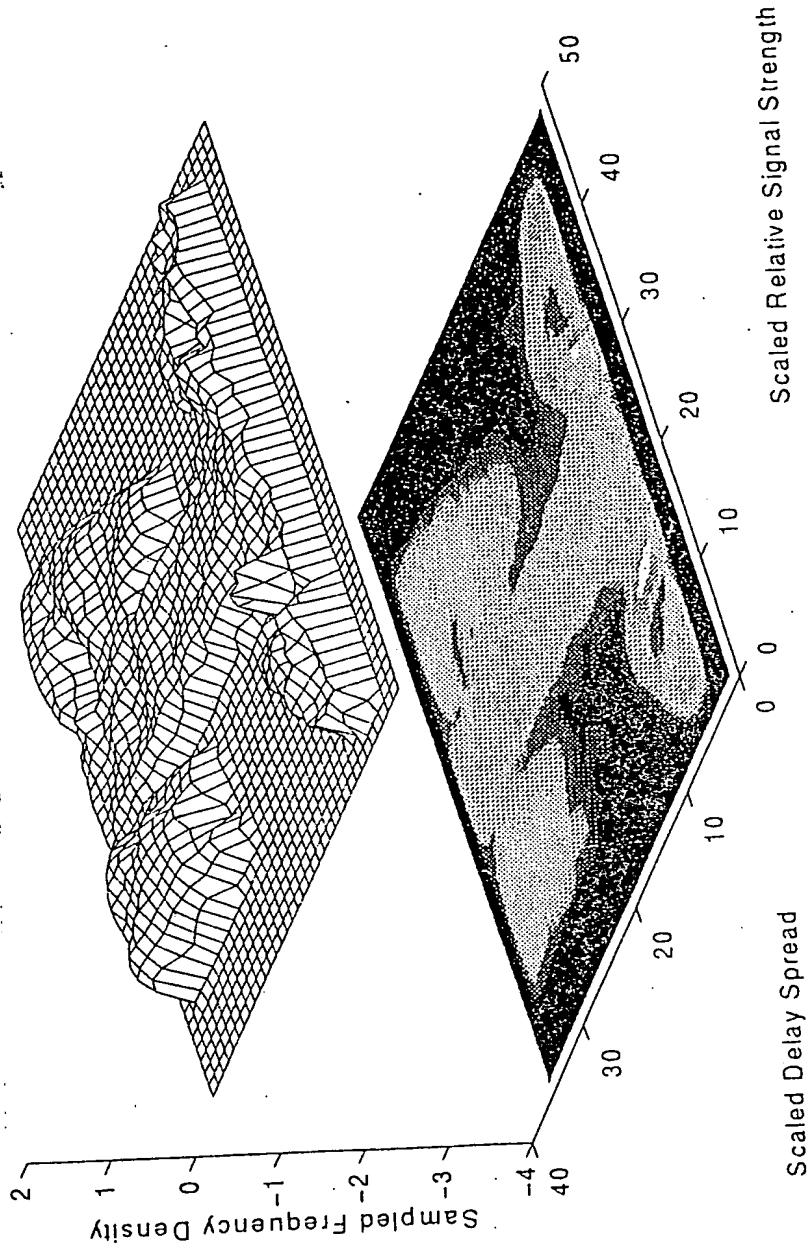


Fig. 28

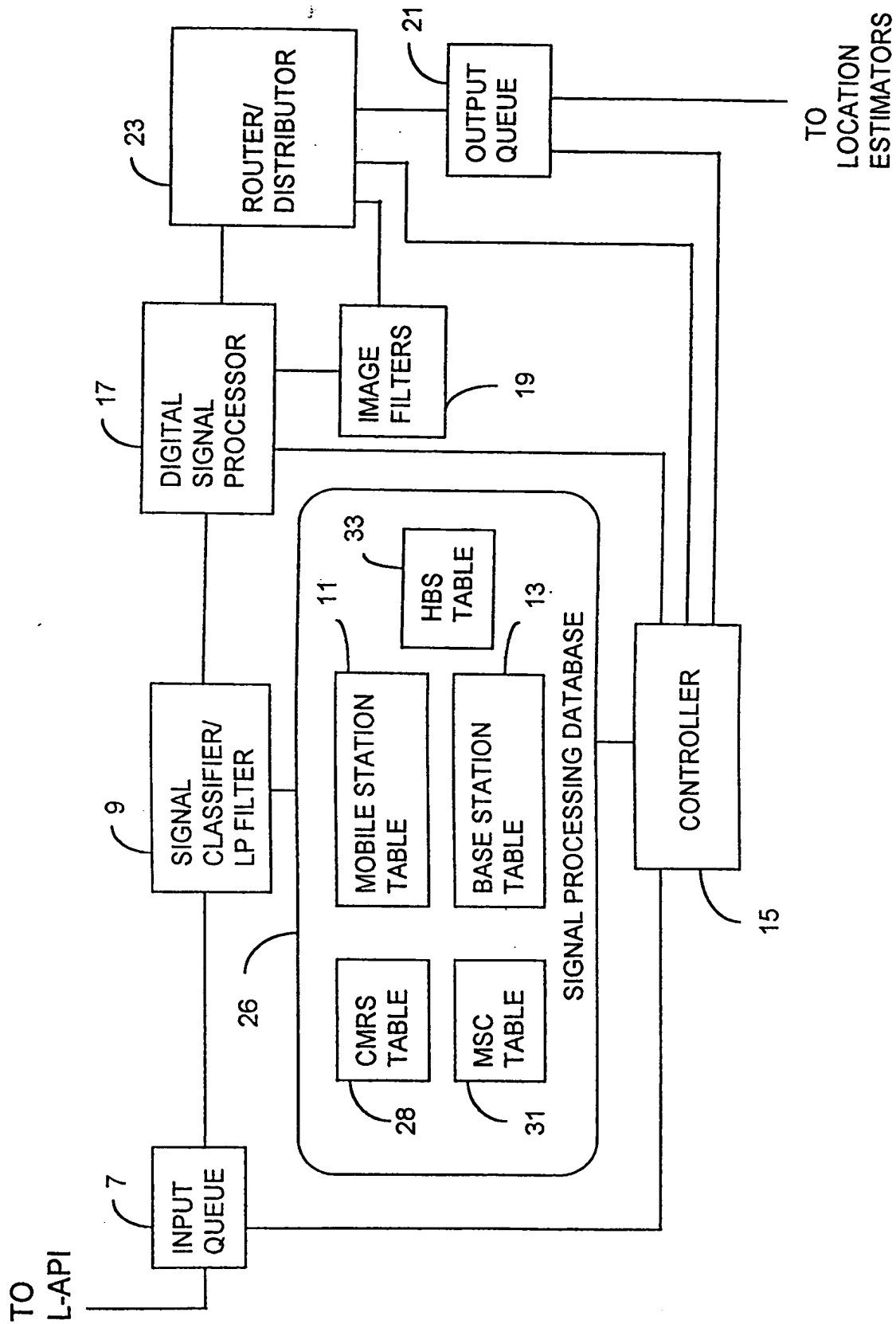


Fig. 29: Signal Processing Subsystem

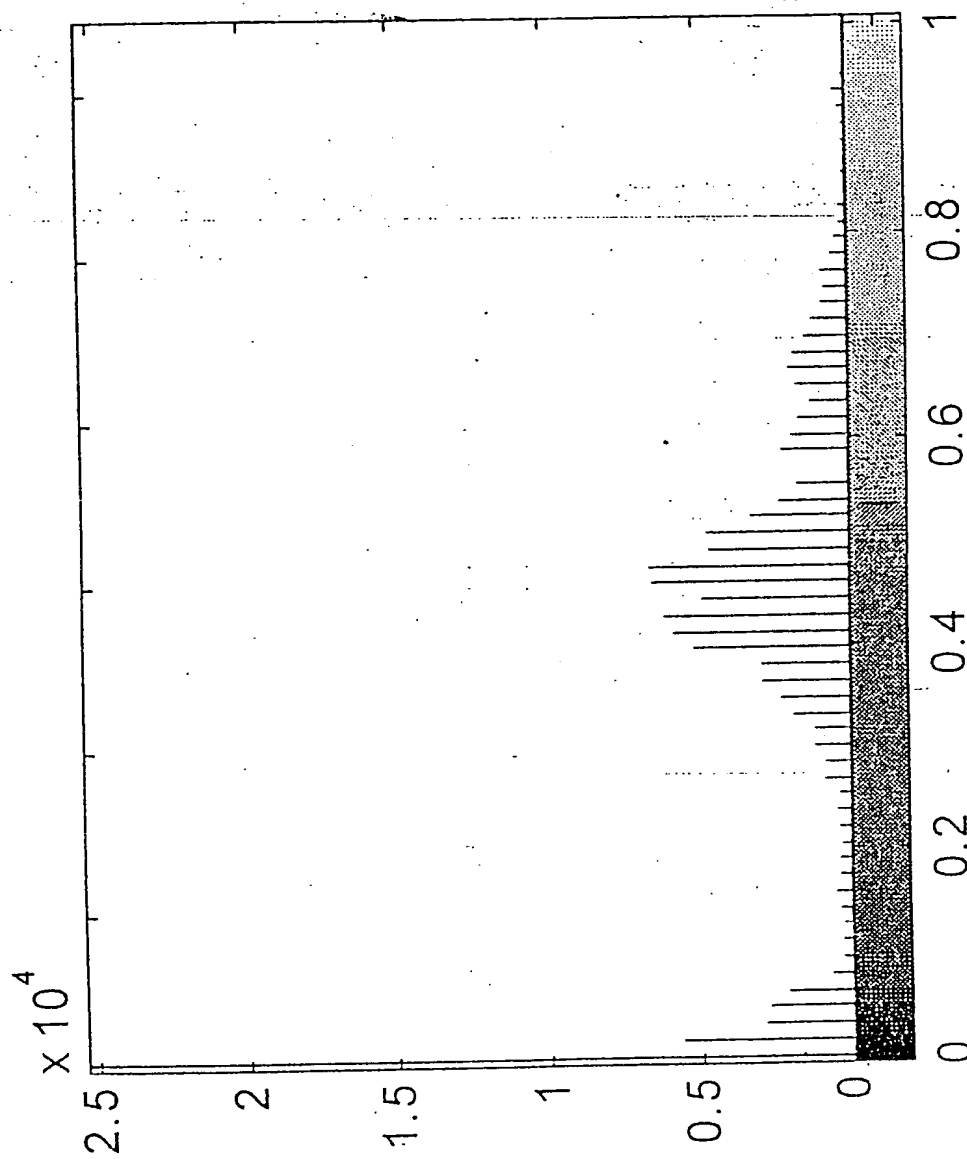


FIG. 30

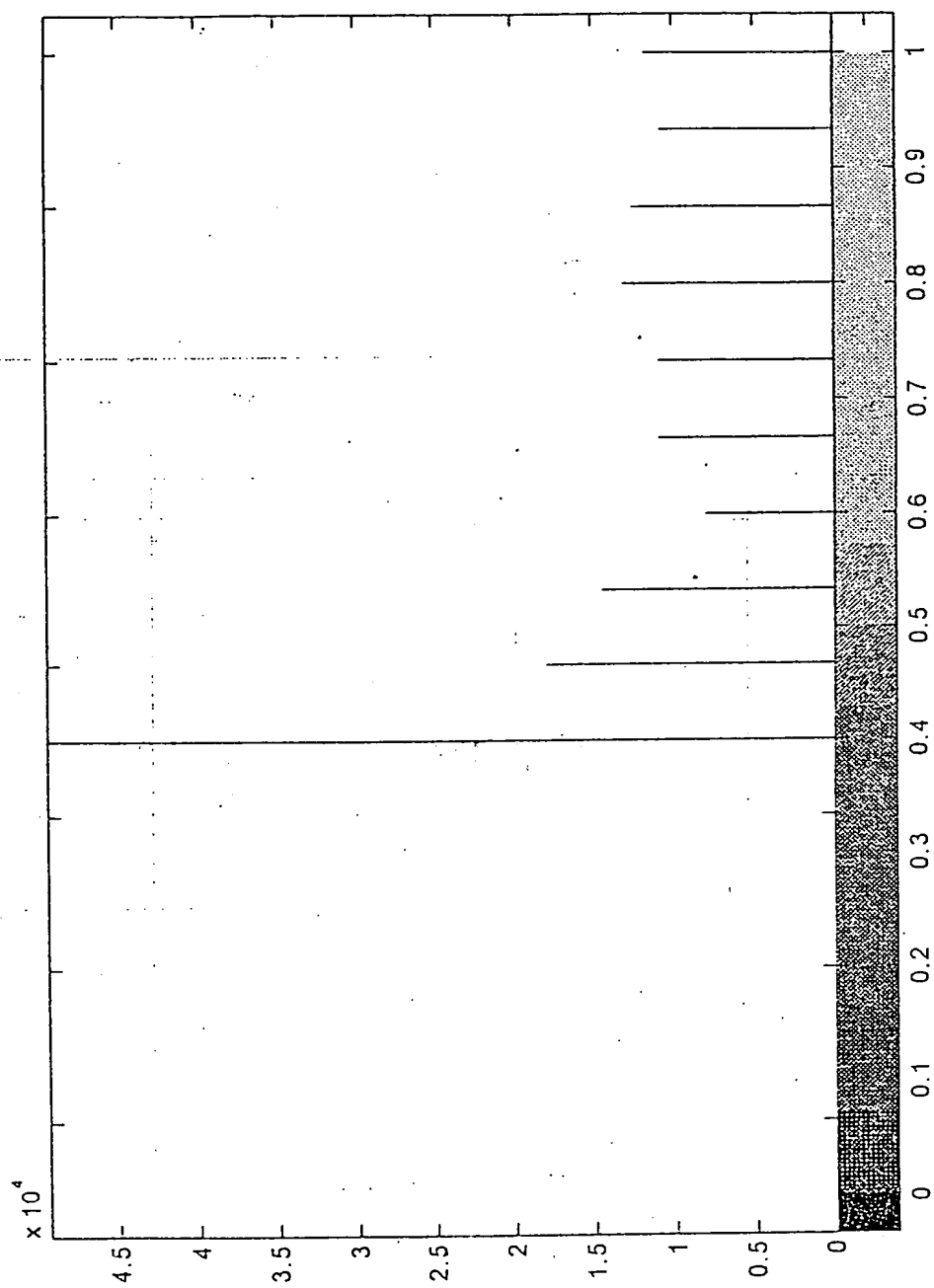


FIG. 31

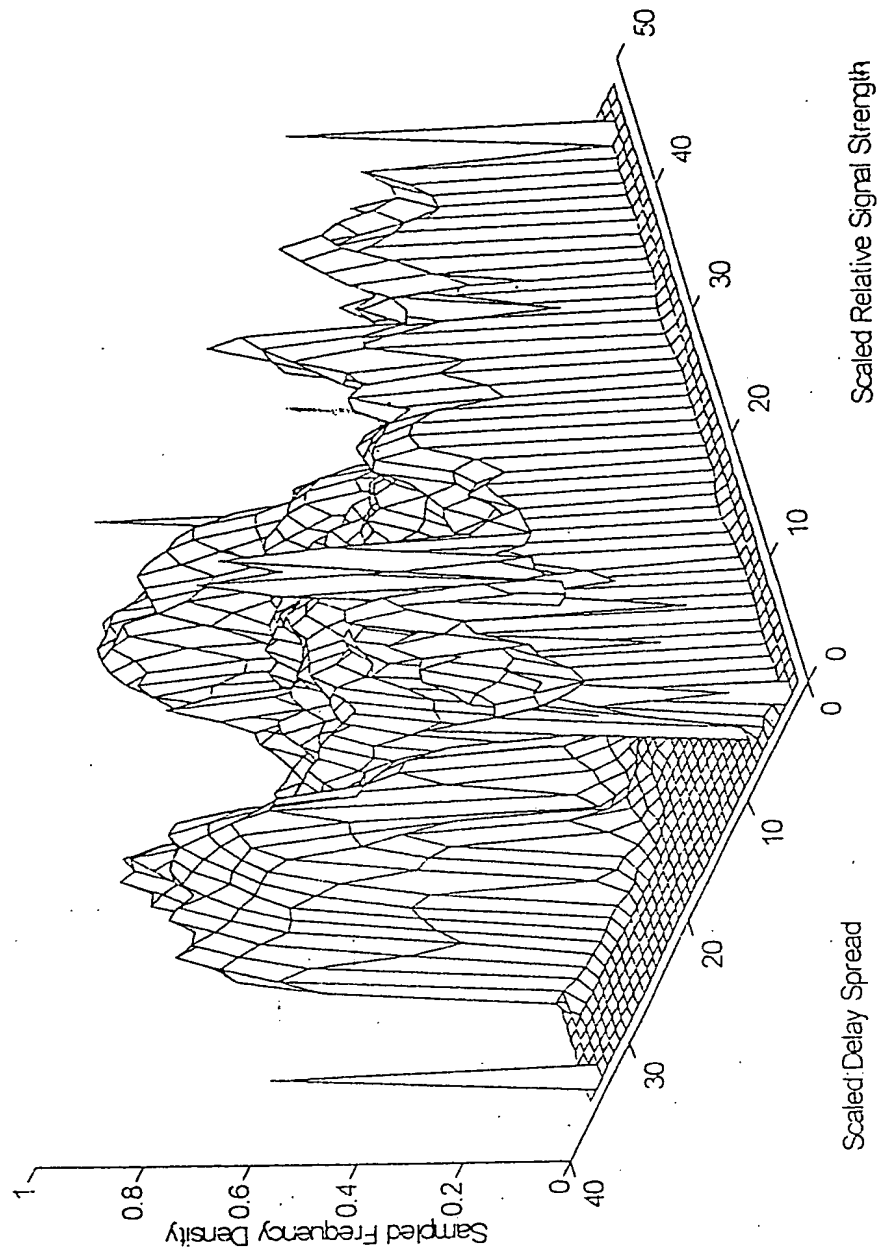


FIG. 32

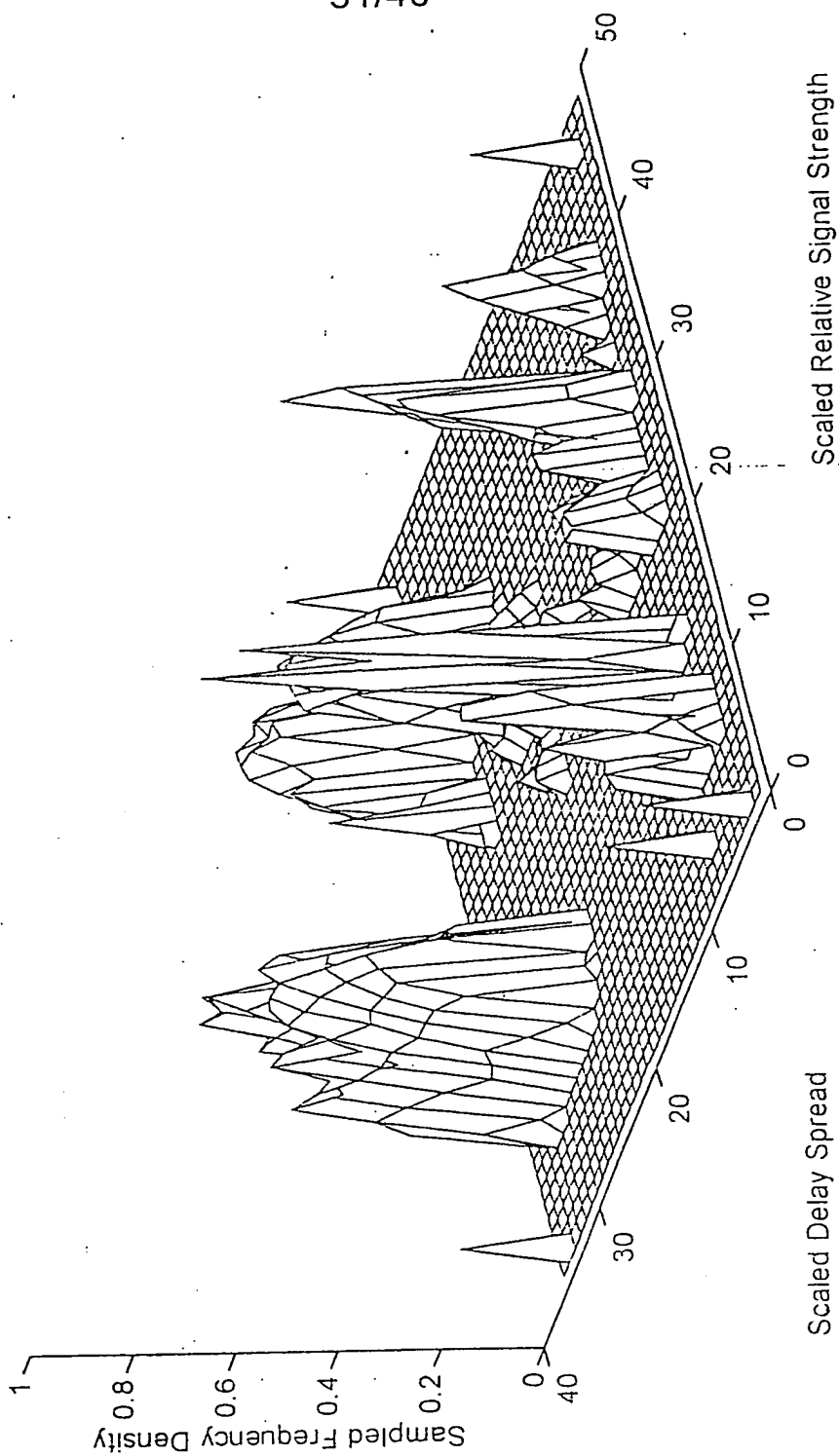


Fig. 33

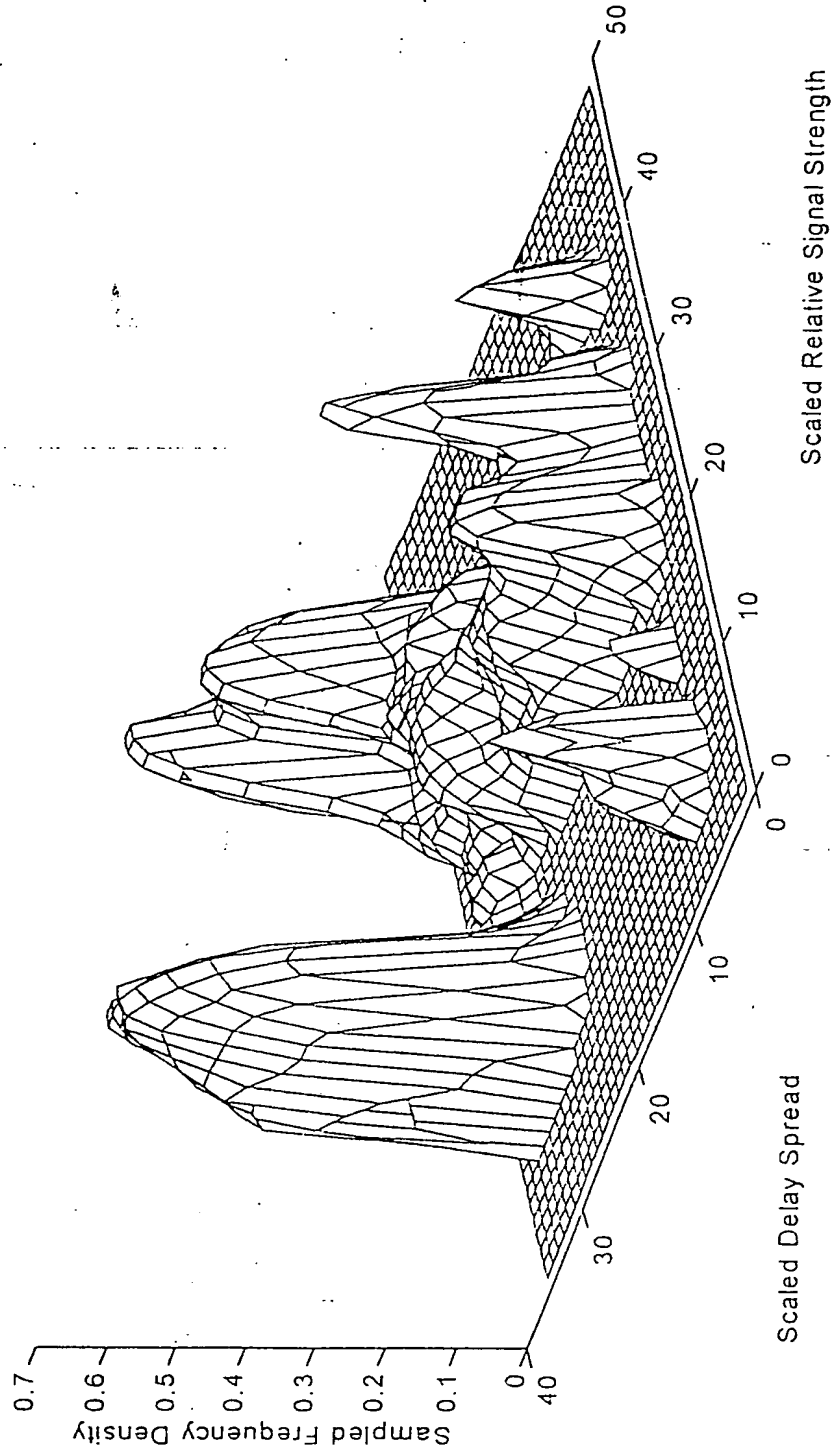


Fig. 34

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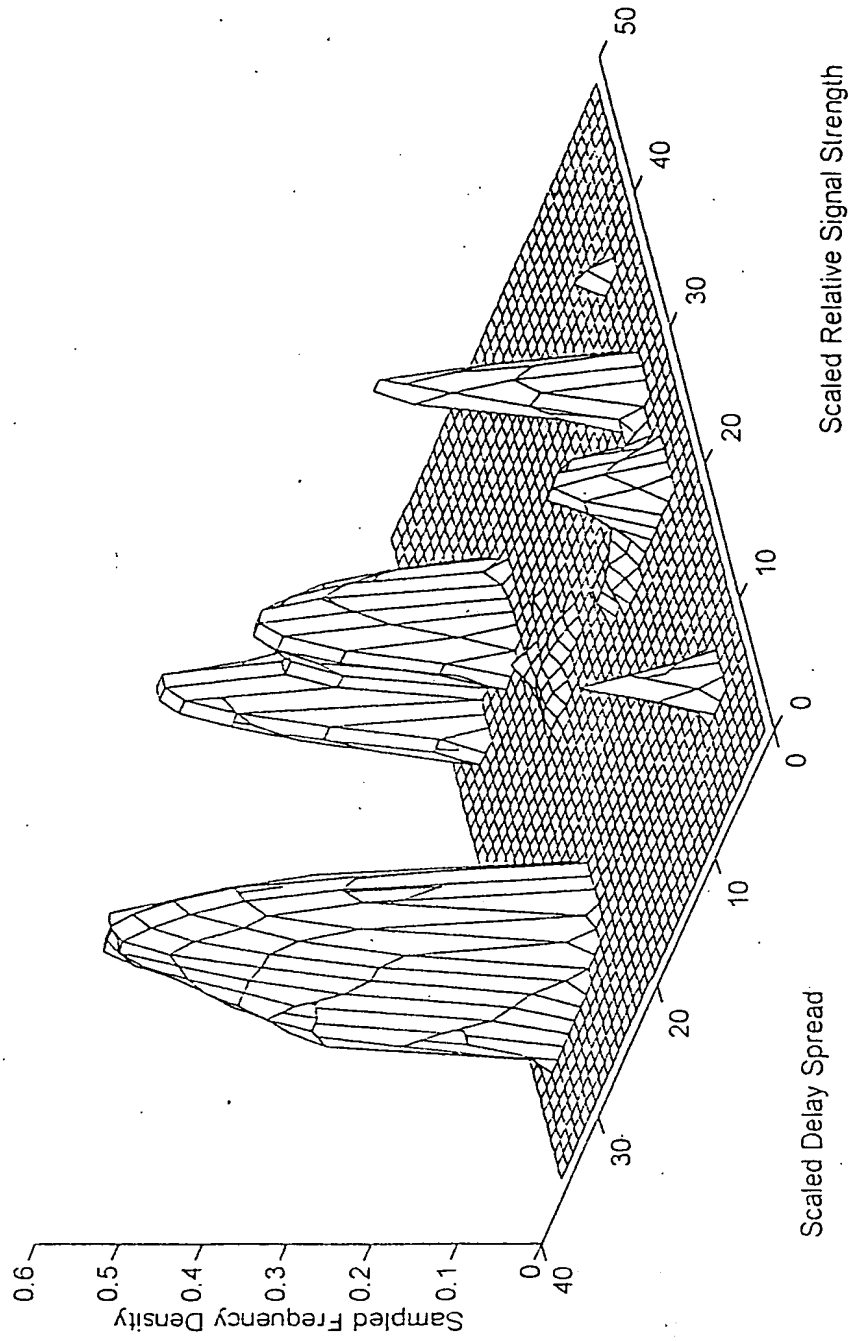


Fig. 35

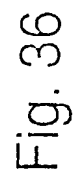


Fig. 36

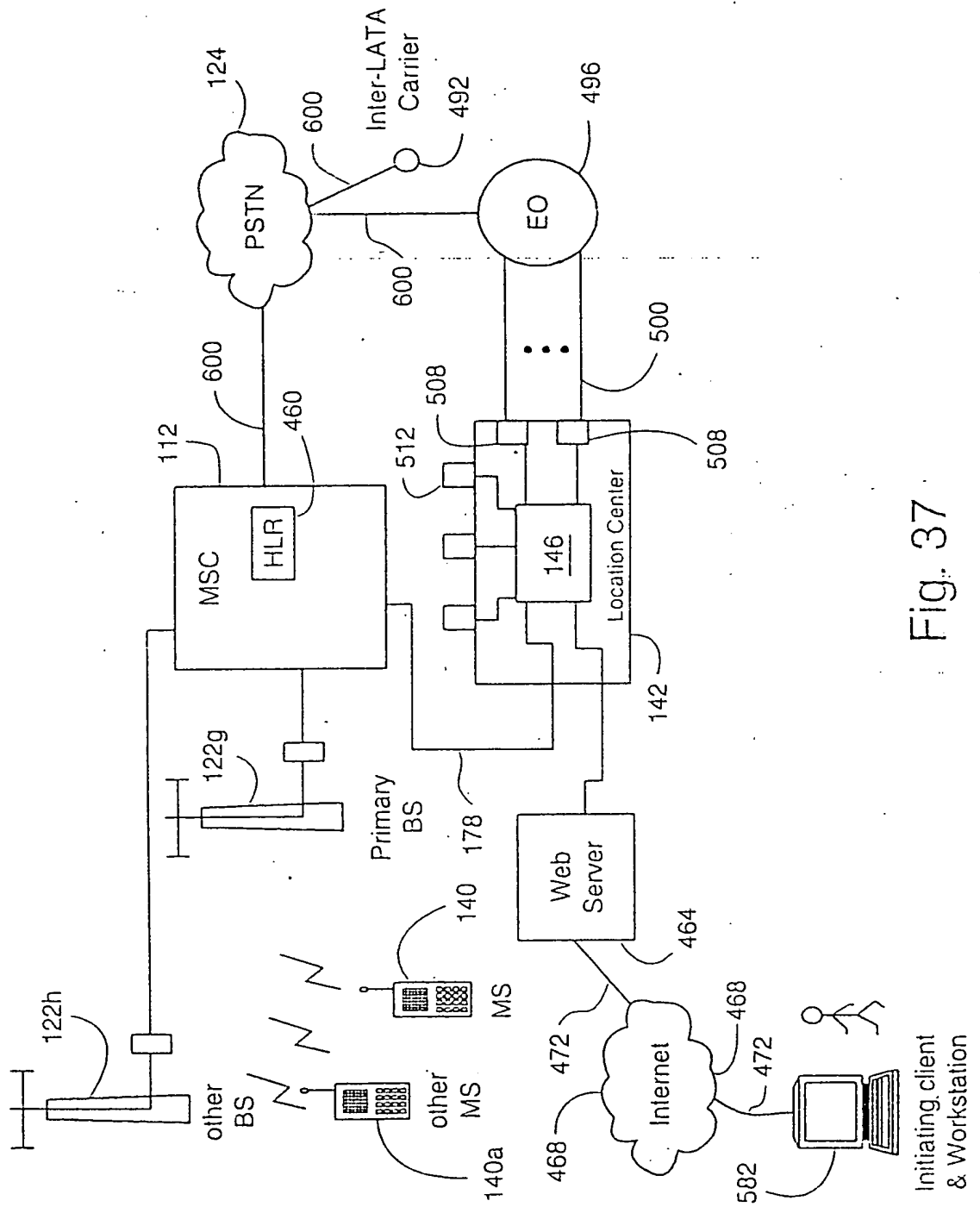


Fig. 37

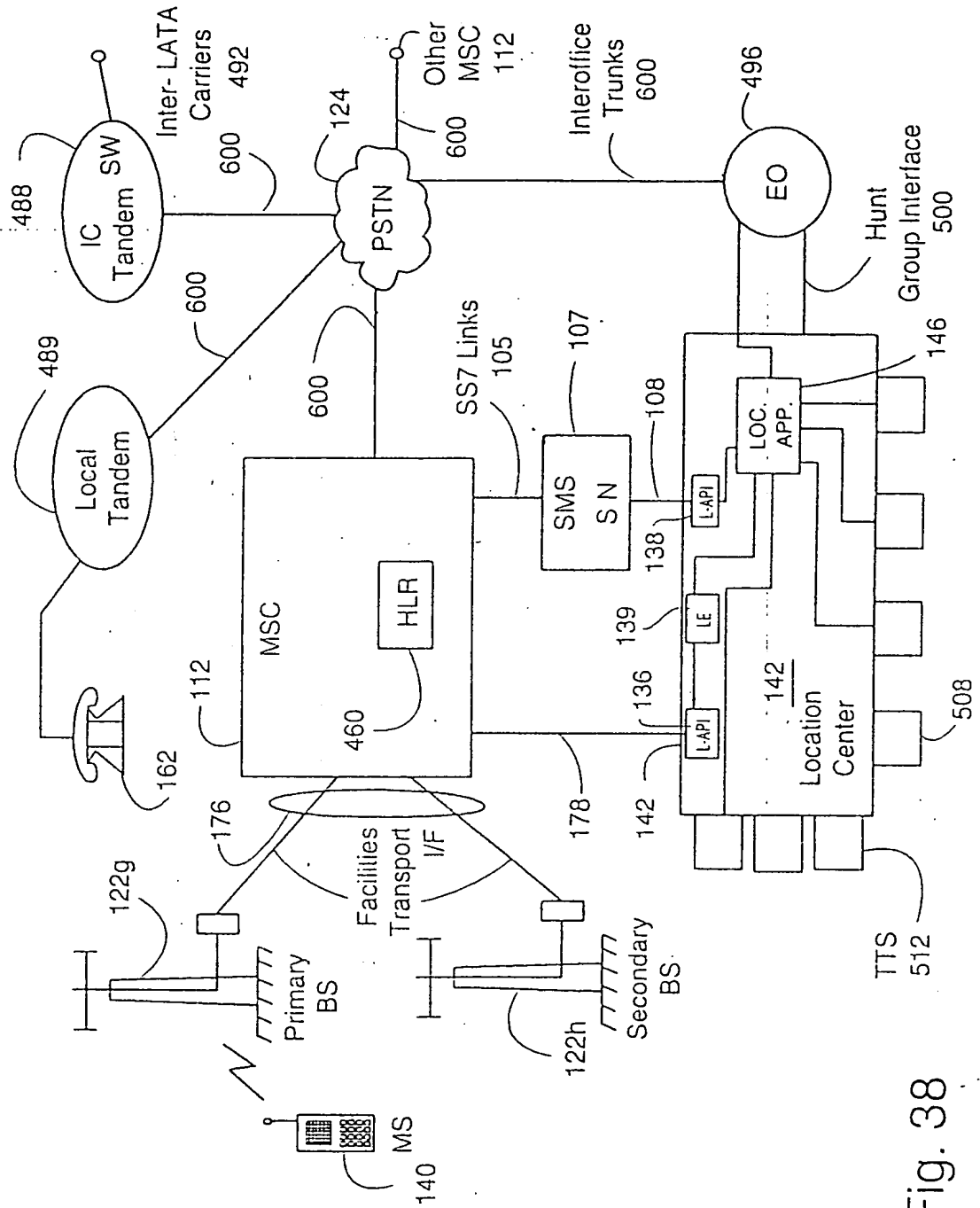


Fig. 38

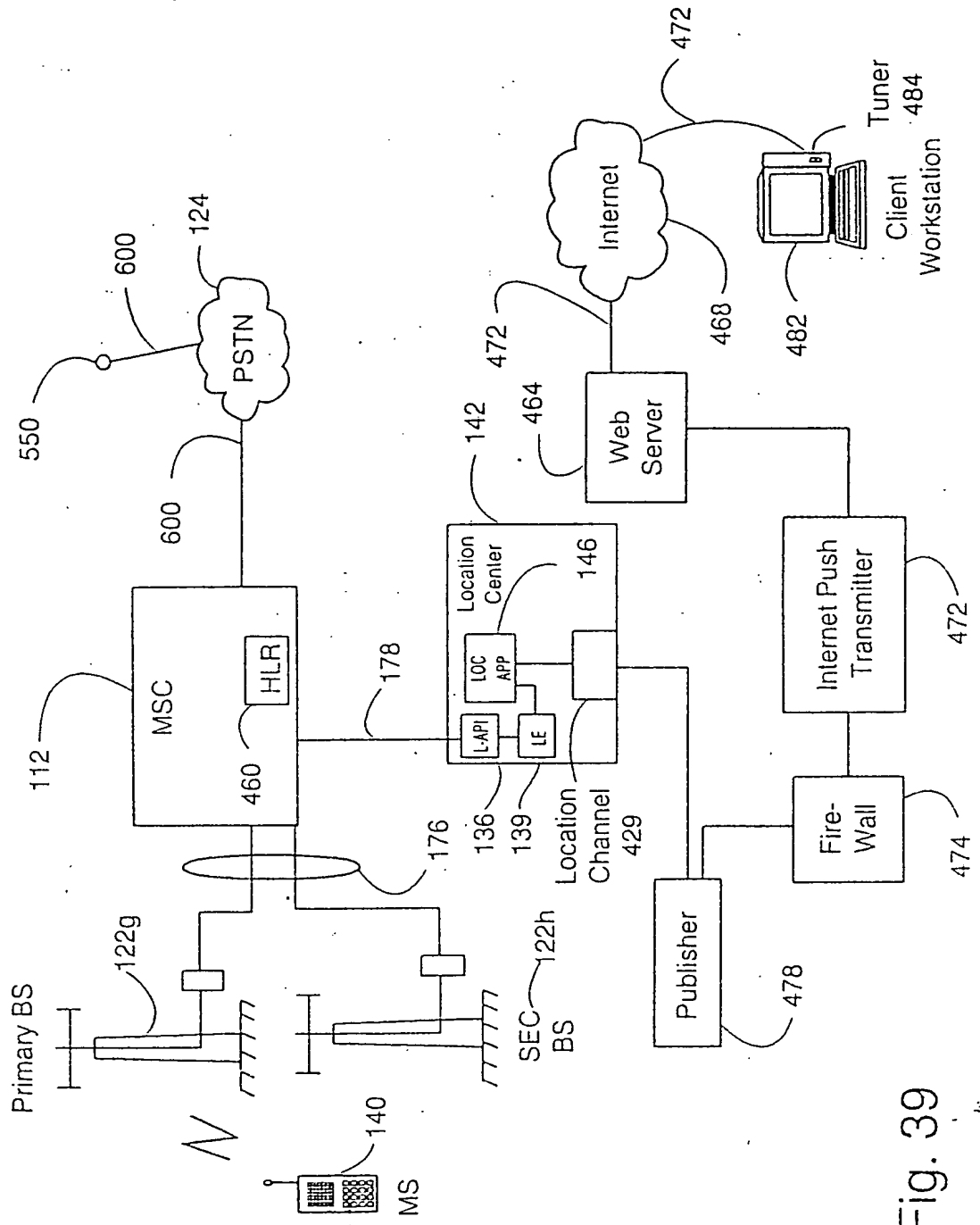
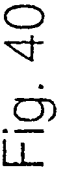


Fig. 39



Turn #	Directions	And Go	Total Miles
Start	Head SOUTH on BROADWAY, FromStart Marker (1999 Broadway, Denver)	1.4 mi	1.4
1	BEAR LEFT onto E. SPEER BLVD	0.9 mi	2.4
2	BEAR RIGHT onto S. DOWNING ST	0.4 mi	2.8
3	TURN RIGHT onto E. CEDAR AV	0.1 mi	2.8
4	TURN LEFT onto S. MARION PKY	And then	2.9
END	End Marker (255 marion Parkway, Denver, CO)		2.9
WARNING: use these directions at your own risk. Lucent Technologies is not responsible for their accuracy or for any losses resulting from their use. Obey all traffic regulations.			
User Manual Sections: [Routes In General] [Turn-By-Turn Directions] [Caveats]			

Fig. 41

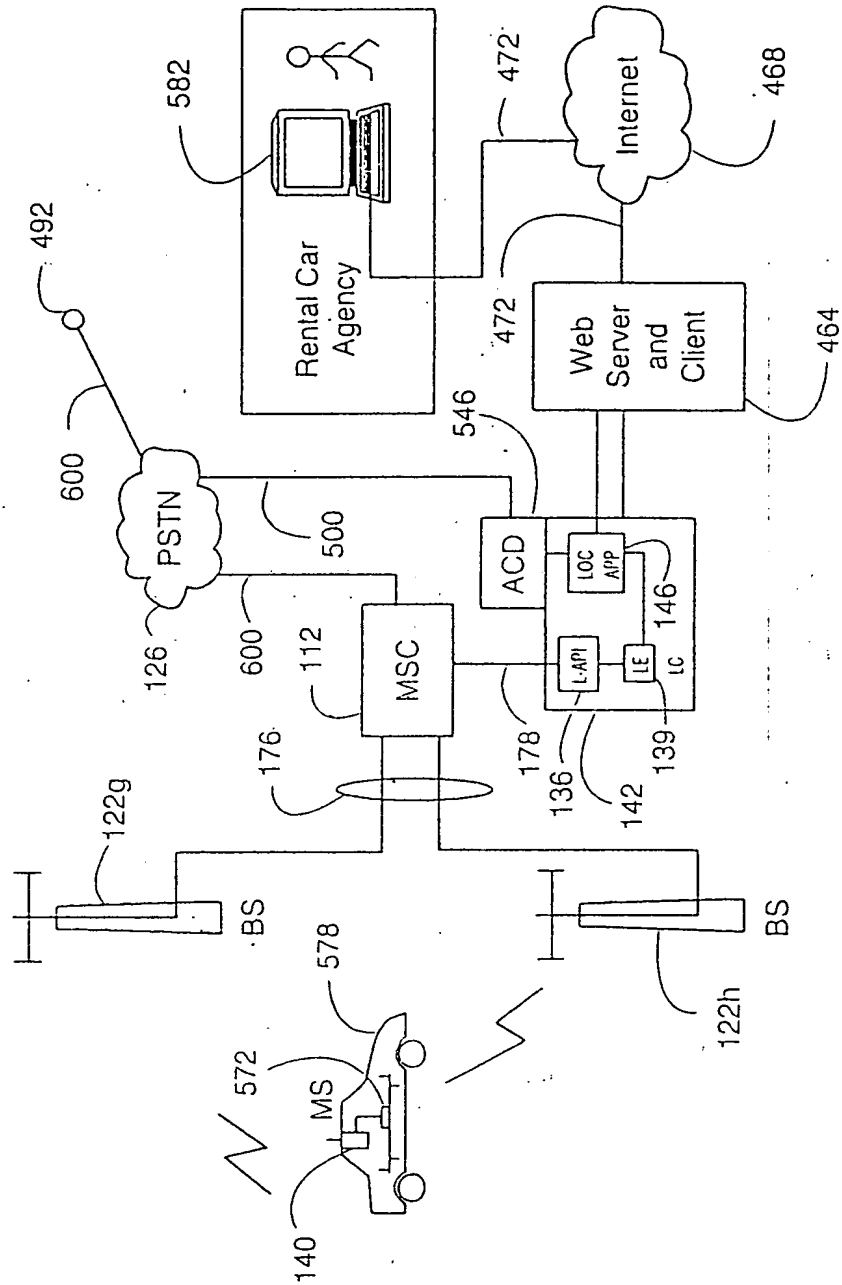


Fig. 42

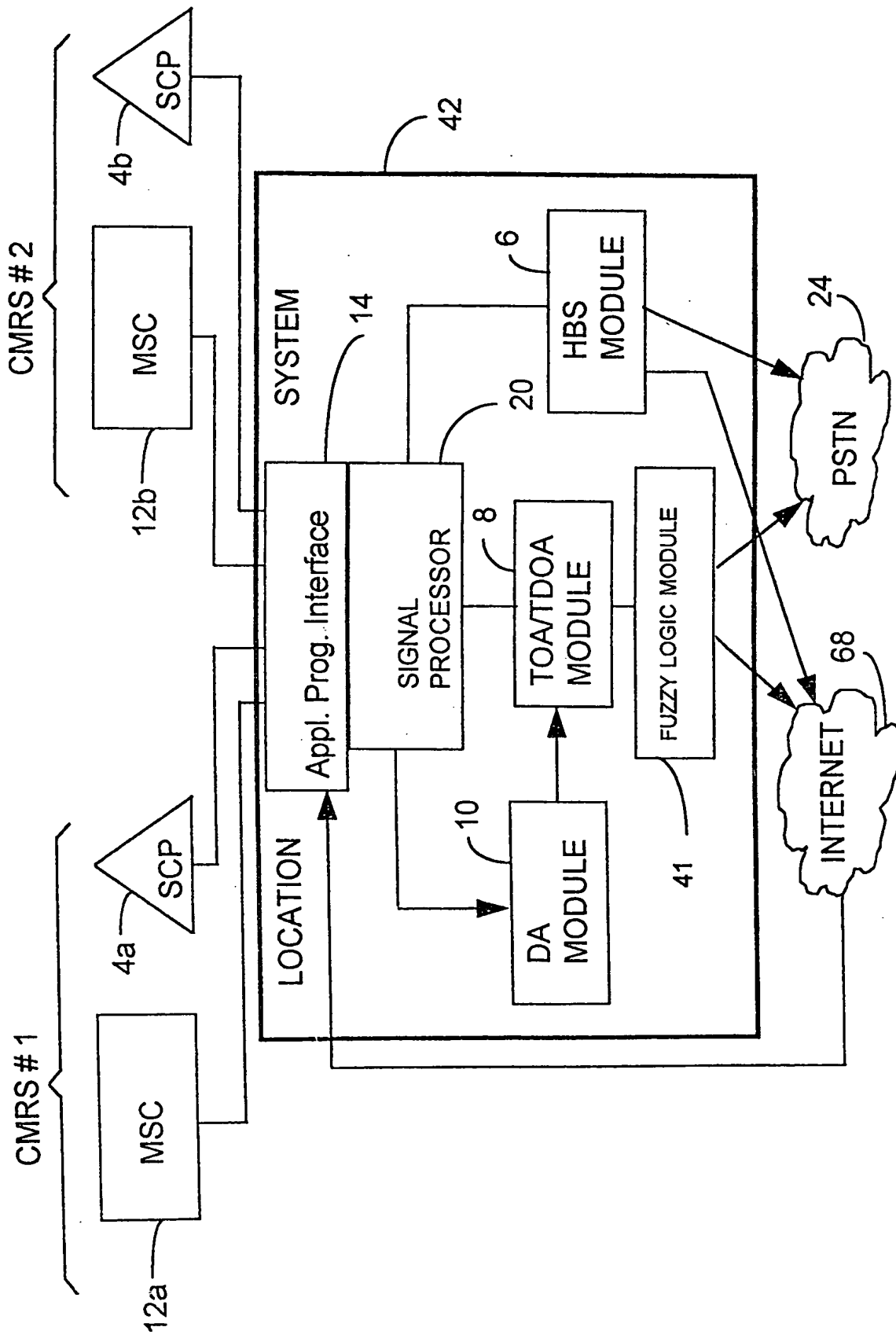


FIG. 43: WIRELESS LOCATION USING FUZZY LOGIC